THE

NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

NEW SERIES. **Boston, September, 1869.** VOL. III.---NO. 9.

R. P. EATON & CO., PUBLISHERS, OFFICE, 34 MERCHANTS' ROW. **MONTHLY.** SIMON BROWN, S. FLETCHER, } EDITORS.

SEPTEMBER.

The leaves that made our forest pathway shady,
Begin to rustle down upon the breeze;
The year is fading like a stately lady
Who lays aside her youthful vanities;
Yet, while the memory of her beauty lingers,
She cannot wear the livery of the old,
So *Autumn* comes to paint with frosty fingers
Some leaves with hues of crimson and of gold.

George Arnold.

SEASONS and man were made for each other. His love of change finds gratification in the peculiarities of the changing months. He would grow weary and listless if *July* were extended to a hundred days instead of thirty. As the months come and go, they seem to stir up within us sentiments which are in accordance with their own nature. Though we may not as yet have felt any "untimely frost," and rich harvests are bending all around us, we *do* begin to feel that the year is on the wane. It is "declining into the vale" of months. It has reached the summit of the hill, and is not only looking, but descending into the valley below. The year "steps onward toward its temporary decay, if not so rejoicingly, even more majestically and gracefully than it does toward its revivification. If *September* is not so bright with promise, and so buoyant with hope as May, it is even more imbued with the spirit of serene repose, in which the only continuous enjoyment consists. Spring 'never *is*, but always *to be* blest;' but September is the month of consummations—the fulfiller of all promises—the fruition of all hopes—the era of completeness."

It is too much a habit of thought, with a great many excellent people, to look upon the waning year as a *dying* year, and to hold it up as a type of our own brief hold upon earth. In some particulars, this is undoubtedly true. The beautiful language which we quoted above speaks of the year as stepping onward toward its *temporary* decay. The lapse of each year also finds in us a stepping forward toward a temporary decay—not a final decay.

The thought, then, which we shall be glad to inculcate is this, that—

"There is no death! The dust we tread
Shall change beneath the summer showers
To golden grain or mellow fruit,
Or rainbow-tinted flowers;"

and that the spirit or soul which God gave us when he "created us in His own image," will *never die.*

Like the effect of the lapse of time upon vegetable life, so will it be upon our bodies

here. We are stepping forward toward a temporary decay of what is mortal in our natures, and as we proceed the effect upon our minds should be something like that of the month of September to the candid thinker,—the fulfilment of promises, the fruition of hopes—the era of completeness. Let this view of life become one of habitual thought, instead of that of decay and death, and we become citizens of the new world at once, with new hopes, new powers, and stronger aspirations after a blessed immortality.

Such, kind reader, is our lay sermon respecting some of the things which influence us in the month of *September*. Let its lesson abide with us during its brief term, and lead us to cheerful views of life and life's duties.

As business men, we think it proper, as each month dawns upon us, to look forward and ascertain what its demands are, so that all its duties may be discharged "decently and in order." Can it be less a duty in us to give attention to our moral and spiritual needs, and make the pathway to them clear and pleasant? By no means. He who neglects these, neglects his highest interests in life.

SEPTEMBER, like the other months, calls for a succession of labors. Nearly all the crops are gradually ripening for the harvest. But they do not come all at once. They need the eye of the master to say at what precise day they shall be gathered in. A mistake in these particulars will sometimes make an essential difference in the value of the crop. For instance: — Carefully conducted experiments show that wheat harvested several days before it is fully ripe, will give more weight of grain and flour, and that the latter will be of better quality. So that a variation of a few days in the time of harvesting a crop of wheat, may make a money difference of $5, or $500, according to the amount of the crop. This principle bears upon the crops of the present month. A disregard of many of the items of harvesting which are to occur in September, might swell the amount of loss into a sum as large as the cost of the entire harvesting.

GRAIN.—In getting in any of the grain crops in Autumn, they should be sown sufficiently early to allow them to get firmly rooted before their growth is arrested by frost. If the roots get a firm hold of the soil, the plants are not only less likely to be thrown out of the ground by the frost, but they have gone down where they can find nutriment to give them an early and vigorous start in the Spring. The last days of August are better for sowing than the middle of September.

HARVESTING POTATOES.—Some say that potatoes should be dug just "as soon as their skins will not slip upon rubbing them." Our practice has been, however, to let them remain in the ground—if not on a wet soil—even into the first week of October. It seems as though no place could be better adapted to preserve them than the beds in which they grew. In such situation they are not crowded, are kept from the light, and in a condition sufficiently moist to prevent undue evaporation. We know they keep perfectly well in the ground through the winter, because we find them there in perfection when ploughing in the spring.

What are the advantages of early digging and storing those which are intended for winter use?

FEEDING MOWING LANDS.—A great change of opinion has taken place in regard to feeding the mowing lands in the autumn. Once it was very nearly a common practice with farmers to feed down every acre of their mowing fields, so that scarcely a semblance of green herbage was left. Of course, when plants are fed off in that way, no proper action can long continue between leaf and root. These are as important to each other as is the branch of the tree to its roots. If this close feeding were to occur all at once, and then be discontinued, the plants might recover themselves, and be clothed with leaves before arrested by frosts. But such is not the case. The cattle like best the short and tender grass, and pass over the field day after day, nipping every green leaf as it appears, cutting off all action between leaf and root, until the latter gives up the contest and dies out. It dies of actual starvation. It has thrown out leaves over and over again, to the atmosphere, to drink in its life-giving element and pass them down to the famishing roots; but just as they were accomplishing this beneficent work, some hungry mouth would come along and devour them. How can any crop grow under such treatment as this?

Where the feed is luxuriant it is undoubtedly best to feed a portion of it off, because if covered with deep snows for some weeks, it

will sometimes become so warm as to cause fermentation, and destroy the roots. Although danger from this may not be great, it can be no injury to feed off a portion of a redundant aftergrowth.

FROTH ON THE STEMS OF GRASSES.

The insect which produces this substance appears to be increasing in many parts of New England, and to be doing much damage. Mr. Philbrick Cram writes to the *Country Gentleman*, from Windsor Co., Vt, that in Norwich one farmer had been unable to raise any grass seed for six years in consequence of the work of this insect. Previous to its appearance he had raised grass seed for his own use and to sell. In other sections it has been observed only during the past four years. Mr. Cram furnishes the following description of the insect:—

The little maggot in the froth is the infant bug; the froth is his house, in which he lives while he passes through his infantile stage; you will then find him at the roots of the grass, a matured ugly black bug, about three-eighths of an inch long and in countless numbers; they are so spry that it is difficult to capture one of them alive. In this stage they spend a short time in feeding on the young grass at the bottom, until they make the second change, which is to the chrysalis state. Here they spend the winter as best they can, dormant of course, until the next summer has brought forward the grass. Then from the old last year's chrysalis appears a little, pale, flesh-colored miller, with a body about a half-inch in length, and wings (when spread) about an inch across—very spry. The complete insects eat nothing; their only office is to deposit their eggs in the joint of the young grass from which the head proceeds, and when their complement of eggs is laid they have done their work, and that is the end of the frog hopper race for one year.

For the New England Farmer.

HEN FEVER OF 1844.

Shanghai—Light and Dark Brahma—Crevecœur—Houdan—Asiatic and French Fowls—Effects of Care and Situation.

In the spring of 1844 the hen fever raged in our vicinity to a fearful extent. The staid and healthy farmers, their wives, and even the most respectable maiden ladies in our neighborhood took the expidemic. There was at that time only one known remedy, which was to procure a dozen eggs from Burnham of his famous Ladder or Barrel fowls, and after waiting patiently three weeks for the operation of the first dose, the patient was generally relieved.

Your correspondent, however, was not so fortunate. Having visited a neighbor who had a fine brood of Shanghai chickens, he took the fever in its worst form, rushed home in a frantic condition, sent immediately for thirteen Shanghai eggs, procured and set them the next day. I think no hen ever received more care in sitting than the one on those golden eggs. Fresh water was placed before her each day, and all kinds of food, from buckwheat to roast beef, was on her daily bill of fare. She eventually paid for her care by presenting eleven fine healthy chickens. I assure you my fever did not subside, especially when I sold them at eight weeks old, for the enormous sum of $20. Elated by this success, I immediately erected coops and continued breeding on a larger scale up to the present time. But I have never been cured or relieved of the fever, and never expect to be, while I receive so much pleasure in the management of my poultry yard.

For the past sixteen years my favorite breed has been the light Brahmas, believing that no breed of fowl are their equals in hardiness, production of eggs, and poultry for the market; and after experimenting the past year with many new varieties, I am still of the opinion that for early market, winter laying, and hardiness, they have no superior.

I cannot fairly judge of the merits or demerits of the new French breeds, not having fairly tested them, as most flocks have been made up by importation, and have not been acclimated. The Crevecœur I find hardy chickens, maturing at an earlier age than any breed I have ever raised. They are good layers, but subject to disease at maturity, especially the cocks. I have an imported Crevecœur hen that commenced laying in January, laying her first litter of 96 eggs in 104 days. She has layed constantly since, and is still laying. This is, however, an exceptional case, as I have others that are fair, but not superior layers.

The Houdans, in my judgment, are fair layers, maturing early, are solid always ready for the pot, hardy when young, but like the Crevecœurs, are subject to disease at maturity. I do not consider either of these French breeds so hardy in our climate as the Asiatic fowls.

I have often stated that if any breed should supersede the Brahmas for our northern and western climate, it would be some other variety of the Asiatic fowl. I see no breed except the Dark Brahma that promise to be their superiors. This is a variety of the Asiatic breed. They are a solid, square-backed, broad-breasted fowl, very hardy, large, with yellow flesh, and promise equality, if not superiority over the light Brahma. It is, however, very unwise to judge entirely of the merits of any breed of domestic fowls from the experience of one or two parties, as in different situations, under different care, and with different stock, one's experience may be entirely contrary to that of others. J. S. IVES.

Salem, Mass., July 15, 1869.

BIRDS IN PRUSSIA.—By royal decree, the wren, the sparrow, woodpecker, wagtail, and twenty-five other birds are protected from the onslaught of boys and sportsmen.

SALT FOR STOCK.

SALT as a feed for stock is objected to by a writer in the *Western Rural*, principally on the ground that it is an antiseptic, and therefore retards digestion; it is also a mineral, and therefore poisonous.

Let us inquire into the validity of these objections. An antiseptic is something that counteracts putrefaction. Are digestion and putrefaction the same or even similar processes? Is it necessary that food should putrefy in order to its digestion? The gastric juice, by which digestion is effected, is a strong antiseptic. It arrests at once the process of putrefaction even after it has commenced. Hence an antiseptic does not necessarily retard digestion, and this objection fails.

But "salt is a mineral, and therefore poisonous." We think the writer must be a student of quack medicine venders, who recommend their medicines on the ground that they contain no minerals, and are therefore not injurious to animal life. Are not minerals always found in the animal fluids and tissues? Does not healthy gastric fluid always contain hydrochloric acid? Is not soda a constituent of the bile? Is not iron found in the blood? Is not a large amount of lime worked up in forming the bones?

The hydrochloric acid in the gastric juice, and the soda in the bile, are derived from the salt taken with the food. So, the lime and the iron are taken in with the food. The organs of digestion have the faculty of separating these mineral substances from the organized vegetable and animal substances which they convert into nutriment, of appropriating so much of them as is required to the various uses of the body, and of ejecting the remainder by the pores of the skin, by the kidneys and the intestines. Only about four parts in a thousand of soda are contained in the blood, whatever quantity is taken into the stomach. Only so much lime as is needed to repair the waste in the bones is retained. Nature finds minerals necessary in constructing the body and in carrying on the animal processes, and not only so, but she has a wondefful power of eliminating and throwing off such as are not wanted in the system.

The argument that salt is not needed because it is a mineral is therefore without foundation. Salt undoubtedly aids digestion, and contributes to the healthy performance of the animal functions, and a regular and bountiful supply of it is not only useful, but very gratifying to all our domestic animals, and more especially at that season of the year when their food is most juicy and succulent.

Since writing the foregoing we have read an article upon this subject in the *Rural New Yorker*, by J. Weldon, a stock raiser of Rockford, Ill., who gives several instances in his own experience of the beneficial effects of salt and of the injurious results of withholding it, from which we copy the following:—

Early in the autumn of 1842, I resolved to go to Chicago for salt and other supplies, but repeated hindrances prevented—so that my cattle were without the needed salt till November, and though the feed had been abundant my stock was in no better plight than they usually were when I turned them to grass. Then commenced the long winter of continued snows, and when my cattle could get their living on the willows, and in the sloughs, all that remained of several of my best cows and some two year olds, were their hides. My estimate was that, had I fed but one more barrel of salt to my stock of cattle (which was quite considerable for those times,) during August, September, and October, 1842, my available assets in May, 1843, would have been increased hundreds of dollars.

HOW TO HAVE GOOD MEADOWS.

Mr. Plate of Bradford Co., Penn, in a letter to the American Institute Farmers' Club, gives his experience, as follows:—

My land is adapted to all kinds of grain, and to timothy and red clover. My practice is, when I sow a piece to grass, not to plough it again in less than eight years, and I frequently let it lie a much longer time. I have a meadow now which has been mowed for sixteen successive years, and it was never better than now. In fact, my meadows, under the right treatment, grow better as they grow older.

I do it *by returning to a meadow all the manure the hay made that was taken from it*, and sowing a bushel of gypsum per acre, each year. In that way the yield of grass is heavier and finer and richer as the sod thickens. I use manure only for top-dressing the meadows; in that way, I get double price for it. It produces as much worth of grass as it would in grain, and also reproduces itself again in the turf. My turf when ready for ploughing under is a solid body of grass roots

twelve inches deep or more, and so thick on the top that no soil can be seen. I consider one such turf, when turned under, equal to 160 tons of first class barnyard manure per acre.

The above statement suggests to our mind some reflections. We have no doubt that with a good soil and such treatment the results stated by Mr. Plate may be reached. We have heard of a case in which a man kept fifteen horses, and put all the manure made by them on three acres and a half of good land, year after year, until he cut seven tons per acre, annually, cutting it three times a year.

But if we, small farmers, with ordinary soil, return to the grass land all the manure made from the hay which it yields, where are we to find the means of making crops of wheat, corn and potatoes? If a man raises nothing but grass, and depends wholly for his income upon stock, this will do. But then he must purchase his grain and other farm products from those who apply manure to the production of such crops.

Now we take it that one of the chief advantages of grass crops is that they furnish the means of cultivating other fields in the various crops of the farm by the manure they yield. If we must return all the manure made from the meadow to the meadow itself, our farming in New England would soon come to a stand still.

The bushel of plaster per acre is very well, and if we can make any compost for top dressing to the grass land so much the better, but the manure made from the hay must go to the corn and wheat and oats and potatoes and garden. We do not doubt that such a sod as that above described, when turned in, would produce a splendid crop of corn and wheat in succession. Then it must be reseeded to grass, and the manure made from it be returned to the meadow. Now what are we to do for corn and wheat during the following sixteen years? Shall we be able to lay up grain enough during the two years of plenty, as Joseph did in Egypt, to supply us during the long period when we raise no grain? We have strong doubts about the economy of such farming, to say nothing about its possibility under ordinary circumstances.

Grass derives a large portion of its substance from the atmosphere. The aftermath decays on the surface and becomes a manure, and the roots accumulate in the soil. Hence grass exhausts the soil but little compared with other crops, and we are able to appropriate the manure made from the hay to other crops. We believe it would be better economy to take off three or four or five crops of hay, and then plough, manure and reseed, thus manuring the meadow once in three, four or five years, and giving it one, or still better, two bushels of plaster each year, and use the manure from the hay, in the intervening years, for other crops.

Mr. P. considers one such turf when turned under, equal to 160 tons of first class manure, and we have no doubt he is right, large as the quantity may seem. One square rod contains 272¼ feet. Multiply this by 160, the number of rods in an acre, and we have 43,560 feet in an acre. This would be equal to 340 cords, and we think that one cord of solid turf would weigh two tons. This would make 680 tons. This will give four tons and a quarter of turf to one ton of barn manure, and *such* turf—turf that has had a top-dressing of barn manure every year for sixteen years. Well rolled down, we think it would fully equal his estimate. This would be heavy manuring and ought to give several large crops in succession.

Now where did this accumulation of vegetable matter come from? The aftermath may be safely set down at one ton, and the hay at two tons per year. Dana says that a cow eating twenty-four pounds of hay and a peck of potatoes daily will make 31,025 lbs. of dung in a year. But 24 lbs. of hay a day would be 8760 lbs. or four tons and a third. Two tons will give less than half of this, say 15,000 lbs. But of this eighty-three per cent. is water, so that there will be less than a ton and a quarter of solid matter from two tons of hay, to be returned to the soil. This gives but about two and a quarter tons of solid matter returned to the soil annually. Where did the other seven and three-quarters come from? Undoubtedly from the atmosphere. "Grass groweth everywhere." It is the universal fertilizer provided by Nature. It derives from the atmosphere the means of fertilizing the earth and enabling it to produce all the crops required by man; and it is because of this wonderful power that it is so profitably cultivated, as by its means we are enabled to cultivate the almost unlimited variety of vegetables found in our gardens and fields. If all

the manure made from the hay is required to cultivate the hay itself, we must become shepherds and herdsmen, and live like the Bedouins on the produce of our flocks and herds.

For the New England Farmer.

CIDER AND VINEGAR.

Shall the manufacture of cider and vinegar be made a specialty?

Farmers are so slow in adopting the means for saving labor which the inventive genius of the day is urging upon them, especially in applying water and steam power to their work, that it is pleasant to note any instance of progress.

During the past season an establishment for making cider and vinegar, with steam for a motive power, has been erected and put into operation in Salem, N. H. It consists of a long, large building, situated upon the gentle slope of a hill, with the length or side facing the south. The building is heavy timbered, as indeed it must be, to support the long rows of hogsheads extending from end to end, one above the other, even as high as the plates. The whole length of the south part of the building is partitioned off, and made warmer than the rest, and is supplied with steam pipes. In this room, in which a high temperature is constantly maintained, the process of making vinegar will be hastened. Indeed so essential is heat for this work, that it is intended that the temperature of no part of the building shall fall below the freezing point.

A portion of the first or ground floor is for receiving and storing apples. The mill, which is a common grater, is placed at the down hill end of the building, with the hopper nearly on a level with the floor. The pomace runs directly into the presses in the basement below; the steam engine is near by and does the pressing as well as the grating of the apples. Wagons can readily be backed into the basement, directly up to the presses, so that both loading and unloading is easily accomplished. Cider is made for customers at a certain rate per bushel, or the apples are purchased of them. If the quantity brought is sufficient for a press, it is made by itself; if only a few bushels are brought they are put with other lots. The farmer has only to leave his apples at one door, and in a short time his cider will be ready for him at the lower door, or he can at once exchange small lots for cider and depart without delay.

The works were not finished at the time of my visit late last fall, and I understand an enlargement is contemplated during another season. The employment of steam presupposes that the business must be on a somewhat extended scale. Though, to the unintiated, a work of this kind may seem perfectly plain and easy, yet it really requires time and considerable capital, with a large share of patience and experience, to get everything in complete working order. The proprietor is a son of Mr. Perham, the well-known vinegar-maker of Chelmsford, Mass., and he has manifested an enterprise which shows that he has the utmost confidence in his success. From adjoining towns he had bought large quantities of fruit, and several thousands of bushels had been worked up last season,—the first of his operation here. He had also commenced making and putting up pickles. These he purchases in the neighborhood, and the younger members of the farmers' families can gather many a dollar from the cultivation of this crop. The works are only a few rods from the depot, and the city markets can easily be reached. Whatever of profit this enterprise may return to the proprietor, it certainly confers a benefit upon the farmers of that locality, for it at once creates a ready home market for the refuse apples, and introduces the cultivation of a new crop.

This, I believe, is the first attempt to introduce the steam engine in making cider in this vicinity, though there are several mills where water power is used. They are conducted on the same plan as the grist mills,—the proprietors do all the work and charge a certain rate or toll on a bushel. The advantages of these mills are apparent in fruitful seasons, and farmers will go a long way past the small, old-fashioned mills worked by man and horse-power, to have their work done in a workmanlike and prompt manner.

Mr. P.'s establishment differs from others, inasmuch as it furnishes a ready home market for that which would otherwise require considerable time and labor to convert it into cash. Similar establishments are needed in all apple-growing districts. A large portion of the unmerchantable apples are now lost. The process of making cider by the old mills is laborious and tediously slow. Where the quantity of apples is small, the labor of gathering them, working up in these mills, and then disposing of the product often exceeds the return. In fruitful years, when the quantity is large, it is often kept so long in waiting for "a turn" at the mills that it is injured or lost. Were these mills of sufficient capacity, not all farmers are expert cider-makers, and only a few have the conveniences for making vinegar at a profit. Now if there was a home market near by for the apples, where five, fifty, or one hundred bushels could be sold at once, there would be an inducement to gather up and save much that is now wasted. Here is an opportunity for the manufacturer to step in and help both producer and consumer,—a proper sphere for the middle man,—for farmers have the apples and want to sell them, and the cider and vinegar is wanted in the markets. When cider vinegar is made in the country, and not in the city, the lovers of that article can have the greater assurance that what they buy under that name is truly the product of the apple

tree. And when all the produce of the orchard can be turned to a profit, the culture of the apple will be more encouraging.

Lawrence, Mass., 1869. N. S. T.

For the New England Farmer.

THE GARDEN IN SEPTEMBER.

The revolving seasons again bring us days and nights of equal length, and a month that epitomizes the year, as summer and winter are both pretty well represented by the varying temperature of its thirty days. The ancients in tracing out and naming the constellations of the heavens gave the name of "*Libra*, or the scales," to that cluster of stars seen this month on the meridian, in the track of the earth; thus not unfitly representing the equal length of the day and night.

The dry and sweltering heat of the first few days of the month usually soon gives way to storms, winds, cold and frosts which terminate the growth of most varieties of vegetables in the garden. Our duty now is, to prolong the season as far as possible; to gather in the ripening crops and save them for future use; to make provision for coming seasons by planting seeds to grow plants to be wintered over; to make preparations for cold frames and beds; to gather and save seeds; and to do up all needed, seasonable work,

The past season has forcibly impressed on gardeners the importance of thorough drainage. Well drained and deeply worked ground suffers less from great drought or too much wet than other land. It absorbs heat more readily and becomes warmer to a much greater depth, and is also in working order much earlier in spring, and continues the growing season later, in addition to its superior productiveness over that undrained and shallow worked.

Beans.—Pick and preserve the string beans for winter use, as fast as they come to suitable size. All should be saved before frosts, as light frosts often spoil them. Pick off, shell and dry all pole beans, ripe or unripe, that have made a growth, especially the Lima, that prince of all beans. Shelled and dried, they are enjoyed and are almost as good, cooked in winter, when green vegetables are not to be had, as in their season in the fall. The Lima continues growing late, and ordinarily a large proportion of them are caught by frost before ripening. These, if properly secured are a valuable part of the crop, and match well the dried sweet corn for succotash.

Cabbages and Cauliflowers.—Continue to hoe and cultivate frequently. The latter part of the month sow seed for plants to winter in frames, &c.

Celery.—Earth up as fast as a few inches of growth is made. Be careful that none of the leaf stalks are broken or bruised, or any dirt is allowed to scatter into the heart. Earth up only when the plants are dry.

Corn.—Always make it a point to save the earliest and best ears for seed, and observe if any variation be apparent. It is by propagating from, and encouraging variations, that better varieties are established. Dry sweet corn for winter use, or if you are successful—which few are in a small way—can it. Cut up and feed the stalks as soon as divested of the ears.

Cucumbers.—Get out and save the seed from those reserved for maturing seed. A very good sweet pickle is made from the ripe ones.

Manure.—The garden and grounds will now furnish a large amount of refuse matter, which should be added to the compost heap. Few are aware of the extent of their resources for making manure.

Onions.—Any remaining not harvested should be pulled when the tops fall over, cured a few days in the sun, then topped and stored in a dry cool room. Seed may be sown for plants to winter over.

Sweet Potatoes.—Lift the vines to prevent rooting. Some of the largest may be removed, by feeling for them with the finger, from the hill for the table. Dig as soon as, or before a frost cuts the vines. A dry day is best for digging.

Squash.—Clear off the vines of the summer sorts which have done bearing. Winter squashes should be gathered and protected previous to any freezing frosts, as a slight touch injures their keeping qualities.

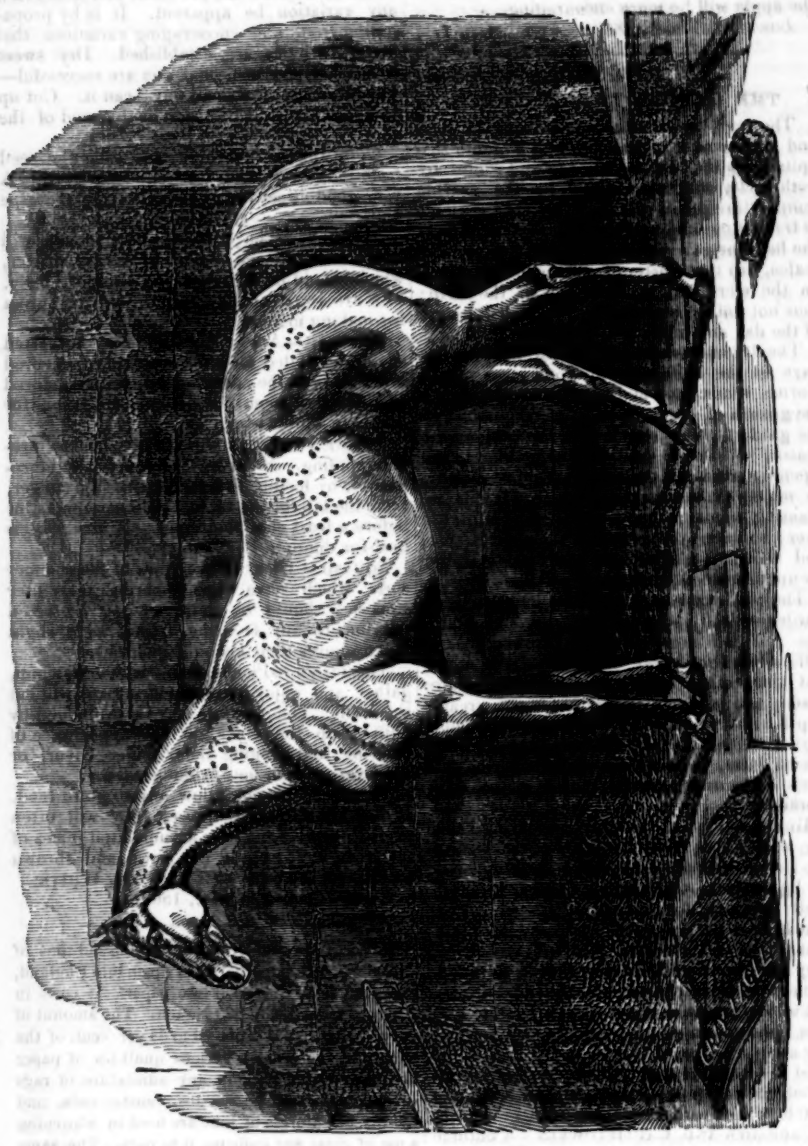
Tomatoes.—Pickle, can, make ketchup, gather and enjoy; for the first frost will cut them off. Their season may be prolonged by pulling up the vines, at the appearance of freezing, and hanging them under cover, or by covering the vines in the garden.

Weeds.—Do not allow any to go to seed. If they are allowed to flower they will often perfect seed from the accumulated juices of the stem, &c., even if cut down and thrown on the manure pile. W. H. White.

South Windsor, Conn., 1869.

Esparto Grass.—Ninety-five thousand tons of this grass were imported from Spain into England, last year, to be converted into paper. It costs in England from $20 to $30 per ton. The amount of paper produced is from 50 to 55 per cent. of the weight of the grass. Various qualities of paper are made from it without any admixture of rags or other substances. 200 lbs. caustic soda, and 250 lbs. of chloride of lime are used in whitening a ton of grass and reducing it to pulp. The same processes are used as in the making paper from rags. It is proposed to attempt the culture of this grass in the United States.

—The *Prairie Farmer* states that of the 412 students at the Cornell University, fifty-seven are studying "agriculture and the mechanic arts."



GRAY EAGLE.

A KENTUCKY THOROUGHBRED, OWNED BY W. W. CHENERY, BELMONT, MASS.

SORREL.

UPON many fields this pest to the farmer seems to be in greater abundance this year than ever before. What *was* it made for? Who can eat it, sleep on it, or use it in any possible way? "Witch grass" is bad enough, but the sorrel keeps an even pace with it in all its habits. Nothing will "thoroughly" kill it. It scorns fire and flood, unless they are unusually persistent. It roots deeply, and perambulates the soil as completely as does a country peddler a New England village.

We think we have seen one hundred acres of it, at least, in some recent travels about the country. On farms which are called "well managed" it stands in acres together, and has so completely taken possession of the soil as to prevent any other plants from coming to sight. Large fields presented an unbroken appearance of brownish-red, the color of the blossom of this pernicious weed. What *was* it made for? Who will ascertain some practical use for it, and help us to turn it to account? It certainly was not made in vain. Now that men are devising means of turning the trees and grasses and flags into sheets of beautiful note paper, why will not some one find means of converting this incorrigible pest into something that will be pleasant and useful!

We saw a single field where acres were covered with sorrel, and forming seed sufficient, we should think, to sow a township of land. This is one of several varieties of sorrel, and called sheep, or field sorrel. Some writer aptly calls it "Nature's grave-clothes," a title which it richly deserves, for if it continues to increase as it has done, there will be a fair chance of its overshadowing all other minor plants, and bury them beneath its remorseless embrace.

It is said that the best way to subdue it is by means of liberal dressings of lime. This has been disputed by some, but the experiment is worth making, as the lime will be useful to the soil, if it does not destroy the sorrel.

One cause of the abundance of sorrel on our farms may fairly be imputed to its seeds which are introduced in the grass seeds that are sown. And not only sorrel seeds, but others, which spring up and infest the land and plague the farmer.

A remedy for this evil may be found in the use of *seed separators*, in the form of fan mills. These are carried to such perfection that a dozen different kinds of seeds may be mixed together, thrown into the hopper and separated, each kind by itself, in the course of a few minutes. The sieves of the separator are so arranged that they separate and carry to different boxes, all seeds that are of different sizes, and at the same time all chaff and dirt is blown out from among them.

Such a machine has been devised and manufactured by Mr. Sanford Adams, which will separate *twelve* different kinds of beans, seeds and grain at once. One of these, or another as good, ought to be introduced into every farming neighborhood in New England, or at least, one in every town. A single machine would be sufficient for twenty-five farmers, and about two dollars each would pay for one. It should be kept at one place, and all seeds brought to it be cleared by the same person,—unless when used for winnowing large crops of a single grain. Then, of course, it would be taken to the place where the grain was threshed.

Who will start this in each town, and begin the process of making fairer fields and increasing the profits of crops?

For the New England Farmer.

THE HIGH PRICE OF BUTTER.

The great advance in the price of this important article of food has probably ocasioned more feeling and talk than the rise of any other product of the farm of the same value. All classes of people appear alike interested in this subject, and are ever ready to discuss it. What keeps up the price of butter? Why is it so scarce? These and similar expressions are continually heard. They show that the present high prices are generally regarded as unnecessary, and more like an extortion than the direct results of simple and legitimate causes, and that many are much irritated by being obliged to pay them. During the war, consumers consoled themselves by believing that the causes of the advance were

temporary, and hoped that upon the cessation of strife, prices would at once tumble down to old rates, if not fall below them. But the yeomen soldiery have been back to their farms four years, and the prices of other products are gradually receding to former rates, while butter sells readily at an advance of 100 to 150 per cent.

What are the causes of the high rates? Are they found in increased exportation, unwonted speculations or severe drouths? These severally and combined have helped to raise the prices; but they have only a temporary influence upon the market, and do not account for the continuation of high prices.

The real cause lies beyond, and is of a more permanent character. It is found in the changed relation of production to consumption. In looking for this change, it should be remembered that while we are multiplying farms through the forests and over the prairies of the West and South, at unprecedented rapidity, good dairies do not multiply at the same rate. The manufacture and sale of butter requires an amount of neatness, care and labor, to which the conveniences and habits of the pioneer, grain producer and stock raiser in our new country are illy suited. It is no rare occurrence for farmers in Texas and throughout the South, who count their cattle by fifties and hundreds, to buy northern butter. The best dairies are confined to the older States. In them, fifteen and twenty years ago, butter commanded prices which returned small profits to the producer; it paid smaller profit than other products which required less labor and care. Farmers in Vermont could get as much for one pound of wool as for four and five pounds of butter. Dairymen saw that the butter market was over-supplied, and began to turn their attention to other things. To help on this change, the young men and women began to leave the farms for the cities, the villages and the West, in such numbers that farmers' wives could not do the work of large dairies without depending upon hired help; and the common run of foreign help, which only could be obtained, made very indifferent dairymaids. Deficient in help both within and without the house, there was a two-fold reason for not increasing the dairy.

But the figures show an actual decrease in some States. By the census of 1860, New Hampshire produced 20,292 pounds less than she did in 1850. Massachusetts made in 1845 nearly four millions pounds of butter more than she did in 1865. The next census will exhibit a marked falling off in many other localities, for during the present decade, means for disposing of the milk at the farm have largely increased. The rapid growth of the villages and cities calls for a large amount of milk, and which is annually increasing. Cars and whole trains are now loaded with milk in towns and counties where butter was formerly made.

The quantity of milk used in the condensing establishments is no small item. But the greatest check to increasing the quantity of butter will be found in the cheese factories, which are so successfully going into operation in the best dairy sections of the country. Where the multiplication of cheese factories will end, it is impossible to foretell; but since cheese can be made with less labor than butter, it is pretty certain the cheese factory will take precedence to the butter factory, even should butter be made upon the factory system.

While these means are operating to prevent milk to be made into butter, the number of cows is increasing slowly,—by no means at a rate to meet the wants of a rapidly increasing population. Farmers still prefer to keep sheep, raise colts or cattle, fatten stock, sell hay and grain,—do anything rather than incumber themselves with the labor and care of a large dairy. In 1860 New Hampshire showed a gain of only 603 cows for ten years. In 1865 the leading dairy county of Massachusetts,—Worcester,—returns a decrease of 3890 cows and heifers, and the whole State, although abounding in local markets, shows a loss of 9624 for the same period.

Thus the production of butter has received a decided check, while the consumption is increasing at a tremendous rate. There is the natural increase of our native population, swelled by daily accessions from foreign lands. These emigrants, it is true, have not been accustomed to rich living. To the majority, perhaps, butter has ever been a luxury; but they quickly come to regard it as a prime necessity. The freedman, too, must now be reckoned with the consumers; for he is fond of good things. Having the right of cutting his own bread, he will desire to see a little butter upon it. Then the fact that Americans are yearly becoming more luxurious in their tastes and given to high living and consequently greater consumers of this article, must not be overlooked. The consumption is increasing faster than at any other period, and it need not occasion surprise if the market is always active, whatever prices may prevail.

With this view of the subject, it is evident that good butter will command high prices for some time to come. It may be made upon the factory system, or farmers' children may be persuaded to remain at home, fully convinced that work about the farm and in the dairy room is just as healthy, improving and respectable as weaving, spinning, binding hats, stitching shoes, and the like. The fathers' and mothers' hands thus strengthened, large dairies may be more common. Whatever course the high prices stimulate farmers to pursue, it will require a vigorous, general, and continued effort to make the production keep pace with the consumption.

In the mean time, what shall consumers do? Shall they pay the high price, and grumble, or practice self-denial and philosophise? They can inquire how far butter promotes health and strength,—whether it does not chiefly make fat and support animal heat; whether in hot weather, when rich food is freely eaten, an unrestrained use of it, to say the least, is superfluous; whether it would not be wise to eat more cheese and less butter, since the former contains more of the elements of milk. If these questions are investigated and the answers they suggest acted upon, high prices may prove a benefit to consumers as well as to producers. N. S. T.

Lawrence, Mass., June 24, 1869.

For the New England Farmer.

BRAINS IN FARMING.---No. 2.

I propose in this article to present some facts which have fallen under my own observation, indicating a lack of the proper use of *brains* among farmers.

Here is a farmer who has already twice as much land cleared as he can cultivate properly. He has a nice wood lot, which is "a thing of beauty" to the passers by, a grateful shelter to the birds in the summer season, and a protection from the keen northern blasts that sweep over our Vermont hills in winter. But wood is four or five dollars a cord. There is money in that wood lot. It is in vain that we cry, "Woodman, spare that tree!" Down it must come, with all its brothers, and go to feed the iron horse. This wholesale destruction of our noble Vermont forest trees is enough to make any sensible man indignant. Unless this destructive, brainless process is arrested, western Vermont will be a desert in less than fifty years. Already we are beginning to experience the evils of this practice.

Said a farmer from the central part of Vermont to me, not long since: "I don't think much of your Lake Shore farmers." I asked him why? His reply was, "because they stack so much of their hay. They waste enough to build all the barn room they need." This is an unquestionable fact. A few years since, in riding seven miles from my residence, I counted seventy stacks of hay in view from the road, as I passed along, averaging five tons, I presume, to the stack. If, as some assert, the waste in stacking be one-third,—but we will put it at one-fourth,—it is not a difficult matter to calculate what the loss must be where the practice is kept up from year to year, as it has been, probably, to a greater or less extent, ever since the first settlement of this section. Does not this fact indicate a lack of *brains* somewhere?

Another fact. All around me I see farmers selling hay to be pressed and sent to the city markets. This is done more or less year after year. Have they not *brains* enough to see that this is a ruinous practice? That they are impoverishing their farms at a fearful rate? That they are burning their candle at both ends?

Again, as I pass along in the summer season, I notice field after field of corn or potatoes so overrun with weeds that not half a crop can be realized. If there be any truth in the old adage, that "one year's seeding makes seven year's weeding," what a task have such farmers before them! It shows a sad lack of brains for a farmer to plow and manure, and put in his seed, and then allow the weeds to rob him of his crop. Cultivate only what you can do *thoroughly and well*, is the true common-sense method. Yet how few farmers practice upon it? I do not know how it is in other States, but in Vermont it is a rare thing that we find a perfectly *clean* crop of any kind. This ought not so to be, and would not be, if farmers would only put a sufficient amount of *brains* into their business. I am well aware that this weed question is a difficult one to deal with. Weeds are hard to kill. Some kinds, I confess, I have found hitherto more than a match for me. Therefore I am disposed to be quite charitable towards my brother farmers when I see the weeds getting the mastery of their crops. Some insist that the only way to get rid of weeds is to keep your lands so poor that they won't grow. But I rather think that would not be a very profitable method, and I would suggest a better one. Make your land as rich as possible; and then when the weeds show themselves, apply the following compound, viz: Brains, all you have to spare; muscle, all you can muster. This method is not *patented*, and all who read this article are at liberty to apply it to their fields persistently until these terrible pests of the farm are exterminated.

I don't know, Messrs. Editors, where I should find a stopping place, if I should go on presenting facts which have a bearing on my subject. I see them all around me,—even on my own farm. Some may perhaps say, "Physician, heal thyself." Well, I wish I could. Be it understood I do not profess to be overstocked with *brains*; but I have enough to see where I and my brother farmers often miss it.

There is one fact, however, having a bearing on my subject, which occupies a prominent place in my mind just now and has done for some years; and that is, the indifference, if not opposition, with which the great majority of our Vermont farmers look upon our Agricultural College. An effort on the part of some has been made to get up a Farmers' Convention or Institute, similar to those held in some of the other New England States, the past winter; but the effort failed—public opinion among our farmers not being ripe for such a movement. I am aware that this does not speak well for the intelligence and enterprise of our Vermont farmers. But so it is. For one, being a Vermonter, "to

the manor born," I confess to not a little mortification in view of such a state of things. When a farmer is not disposed to use what brains he professes to have, and does not seem to care whether his sons learn to use theirs intelligently in the operations of the farm, some might be led to doubt whether he had any brains at all.

I wish some of your able correspondents from Vermont would take up this matter and give it a thorough ventilation.

UNCLE JOHN.

Charlotte, Vt., 1869.

For the New England Farmer.

IN SEARCH OF A FARM.

Well, farmer Roods, I have been for years following this slavish life of a mechanic,—going and coming at the sound of a bell, and having saved a few dollars, I want to try a farm and take comfort in my old age.

That is very singular, Mr. Berry. The fact is, when farmers get to your age they want to sell their farms and take comfort in villages; but you are just ready to buy.

The truth is, friend Roods, I think there is no investment as safe as real estate. No fire can burn, and no man can steal such property.

The farmers don't believe it, for they lend their money to merchants and to banks or corporations, so that others can manage it for them; and the sons, seeing that their fathers have no faith in their business, invest their talents where their sires invest their money.

Well, Mr. Roods, do you know of a farm for sale?

Certainly, Mr. Berry. Nearly every farm in my neighborhood can be bought; and those who most desire to sell will sell cheapest.

What are some of the prices asked?

There is the Smith place, at $25 per acre; but the soil is somewhat run out, the walls and fences down, and buildings poor. Then there is widow Brown's farm, at $100 per acre; in good condition and very productive.

It seems to me, Mr. Roods, that I had best take the cheapest place.

If that is so, you will surely take the Brown farm.

Why, I understood you to say that was $100 per acre, while the other was only $25.

Very true; but I assure you that in farming there is nothing to be valued higher than a productive soil. Where can you get fertilizers to enrich the poor land? Most commercial manures are from fifty to eighty dollars per ton, and stable manures cannot be obtained at pleasure: and while you are experimenting with a few acres, your grass land and pasture is almost unproductive. On the Brown farm, however blunderingly you may go to work on your tillage land, your grass will yield bountifully, and the tillage is already in so good heart that a slight application of guano or superphosphate would give a start to crops that the soil would sustain in a continuous growth. so that every acre cultivated will pay for itself the first year, and the other land will give a good interest on the money invested.

I am not convinced, Mr. Roods. There is a great difference in the price of these farms, and Mr. Tucker bought a farm near Peter's Hill for $20 per acre. He just repaired the walls, painted the house, hung a few gates, white-washed the barn, and sold the farm so as to double his money.

That may be, Mr. Berry; but there is a great difference between improving a farm to sell and improving one for a home to get a living from. That farm of which you speak would not produce double the crops at the double price. My advice to a farmer would be, get your soil fertile as quick as possible, and the good crops will pay for good buildings and good fences. We farmers have an idea that the crops are what we work for, what we eat, and what we sell; and on these New England farms, if the soil becomes exhausted, a little guano or bone dust will not make a rich soil, no more than a pint of milk will make a pail of water into butter.

Well, Mr. Roods, I will look at the farms you mention; and the ideas you have advanced will be considered. J.

Irasburg, Vt., 1869.

THE HAYING SEASON.

The season for cutting and curing the grass crop having come round again, we have a few remarks to make and some advice to give, which may be of service to farmer friends. In the first place we advise to begin the work of cutting grass *early*. This we especially recommend, if the hay is to be fed to milch cows during the winter. But few farmers are correctly informed in regard to the great value of early cut hay as milk-producing food. We made an experiment the past season which proved its high value conclusively. One acre of grass, a mixture of red-top and clover, was cut the 19th day of June, cured in two days, taken to the barn, and stored upon a scaffold by itself. On the first of March we put our herd of ten milch cows upon this hay, and almost immediately the increase in the flow of milk amounted to ten quarts per day. The hay fed to them up to the first of March was of the same variety, grown upon the same kind of soil, but it was cut in July, from the middle to the last of the month. No more of the early-cut hay was consumed; it spent as well, lasted as long as the later cut. It was fresh, and full of the rich, succulent juices, dry, but perfectly soluble. The money value of the product from this hay, fed to ten cows, was greater by nearly one dollar each day, than that from the later cut. If hay is cut early, a good second crop is almost certain to be secured, and this adds greatly in keeping

up a good flow of milk during the winter and early spring. The advantages of cutting hay early for milch cows must not be overlooked. In the second place hay must not be dried too much. We state here wh t we have often before stated, that, if grass is *entirely* freed from *external moisture*, as that in the form of *dew* and *rain*, *it will cure better in the mow than any where else*, provided enough exposure to wind and sun is had to cause one-half of the water circulating in the vessels of the plant to be evaporated. This is accomplished in six or eight hours of favorable weather. Hay is often spoiled by storing it when it holds considerable moisture arising from dew or rain, but very *seldom* or never when it holds no other than that which is natural to the circulating juices. These are important facts to remember. If grass is cut early in the morning, and thoroughly worked so as to drive off all the dew, it may be safely stored the same day, if it be a favorable one. A pound of over-dried hay is worth only half as much as that which is properly cured. Do not saturate your mows with *salt*. Salt does not *preserve* hay. Its action is unfavorable to curing hay in the mow, as it is a hygrometric substance, or one that attracts moisture. It holds, besides, considerable water of crystalization, and this affords moisture, and helps defeat the end had in view. Wet or damp hay will keep no better by throwing over it salt; and, when this substance is used largely, it is upon the whole injurious to animals who are compelled to eat the hay. Who among men could live upon "salt junk" continually? We must use reason and sound judgment in all our proceedings.—*Boston Jour. of Chemistry.*

PACKING BUTTER.

A few years since a dairyman of our acquaintance who had been particularly unfortunate in his sales, sent for a noted butter maker to learn the secret of making a high priced article. The man came and looked over the premises, and the only advice given was, "you need a clean, sweet, well-ventilated cellar f r storing butter, and it must be used for nothing else. Then get oak firkins, heavy hooped, air tight and made just as handsome as the best cooper can turn them out. You need not change in your process of manufacture. This is all you have to do, and I will warrant you success." These suggestions were at once adopted and quick sales, large prices and heavy profits were the result. That dairy has now an enviable reputation and the butter is eagerly sought after.

A dirty looking package will often lose a good sale. It should have a fresh, clean, sweet appearance when it reaches the consumer that will please the eye of the most fastidious.

There are only a few kinds of wood that are fit to pack butter in. Wood of the ash is extensively used in some sections. It contains an acid very objectionable to butter, and should be rejected. Spruce, pine and gummy woods are often used. They impart a disagreeable flavor to the butter. White oak makes an excellent package, but the wood should be thoroughly seasoned before using. Many dairymen invariably select poor packages because they are *cheap*. To save a few cents on the package, they are willing to run the risk of losing a considerable sum on the butter which is to fill it. If sold immediately however the loss may fall on somebody else.

The season has now arrived when great care and attention is required of the butter maker to secure a product that will go into the market sweet and good. In preparing firkins and tubs for use, boiling water should be poured into them to soak for twenty-four hours. Then fill with strong brine for two or three days, turn out and rinse with pure cold water, and rub the sides with pure fine salt. Tubs after being filled should be headed and brine poured in at a hole in the top so as to fill all intervening spaces. Firkins when filled may be covered with a thin piece of muslin, upon which is spread a layer of fine salt and then closed with the wooden cover. Store in a clean, sweet, well ventilated *butter cellar* until ready for market.—*X. A. Willard, in West. Rural.*

PRAIRIE FARMING.

In reply to some questions propounded by a "Factory Boy" in relation to growing wheat on prairie sod, and to prairie farming generally, a correspondent of the *Journal of Agriculture* writes as follows:—

Sod land undoubtedly produces the best wheat grown on prairies. It should be broken with a sixteen-inch plough between the first of June and the first of August. If broken before this time the grass is apt to grow up through the sod and render the ground almost worthless for wheat or any other crop without another breaking; if ploughed later the sod does not rot sufficiently in time for sowing. It requires four yoke of oxen to pull such a plough. The ground should not be broken more than three or four inches deep. It should be harrowed well with a heavy harrow in September and sowed with a drill. By this kind of preparation, sod wheat seldom fails, and generally makes the largest returns; but, boys, you can see that it takes a considerable little sum of money to begin such farming, and to carry it through properly, and the same is true of all prairie farming.

I once thought, as you seem to think, it would be a very nice thing to be a farmer on a prairie. I was poor; I suppose you are; so I went to Illinois and tried it two years. I am cured, as doubtless you will be, if you try it. That portion of Illinois (Coles county)

in which I settled, was mostly in a state of nature, and its inhabitants mostly adventurers from other States, who finding land very cheap, laid out all their money in lands, and in many instances went in debt largely for real estate. The consequences were that nobody had any money to operate upon—nothing with which to build fences or erect suitable necessary buildings. In many places they attempted to farm without any fencing, while in others they had posts driven round and one plank put on. With stock roaming over the prairie, you may imagine what delightful work we had. We were all on a level. The man of means had brought himself down to the level of us poor, by investing his all in lands, and he, like us, had entailed upon himself "vexation of spirit;" and he, like us, was bound hand and foot, unable to turn anything to advantage; and he, like us, at the end of the year, found his troubles and his debts increased rather than diminished. After an absence of ten years I visited that neighborhood the present spring, and found some of my old neighbors, after passing through all the years of "high price" for farm produce, still involved in debt on account of injudicious investments in land, as above stated. There is one thing you may as well set down in your day book, and that is: No one can succeed in farming on a prairie without capital!

You may ask, "Where shall the poor go?" I answer: to a timbered county, where, upon your own land, grows the timber to make your own fencing and your own buildings; where you may, if you are not proud, even erect your own dwelling without any outlay except for the nails which tack it together.

CHEESE AS FOOD.—We remarked not long since upon the superior nutritive qualities of this food, as proved by the experience of laborers in certain countries, where it forms the strongest staff of life. We have since observed certain researches of a French chemist, Charles Mene of Lille, from which we learn that certain cheeses specified as Dutch, Gruyere and Roquefort, contain from 26 to 40 per cent. of nitrogenized matters, which are considered the most highly nutritive constituents of food. Consequently these cheeses are from 25 to 100 per cent. more nutritive than bread or meat, which is set down at 22 per cent. of nitrogen. In the combustible or fatty elements for heating the body by respiration, cheese yields only to butter and other fats. Again in point of mineral nutrition, cheese is found pre-eminent, containing seven to eight per cent. of ashes, whereas meat and bread contain only one per cent. The very richness of this article, however, prejudices its utility in delicate stomachs, where it is often found indigestible. The strongest food suits only the strongest digestion. The attention now given to an improved and increased manufacture of cheese is justified, and will naturally be stimulated by these facts.—*Scientific American.*

EXTRACTS AND REPLIES.

COLORING CHEESE WITH ANNOTTO.

I commenced twenty years ago to make cheese, and have made more or less every year since. We have found a ready sale at the highest market price and have never used any coloring; but as I rather like to be in fashion, I think I will try a little this year if it can be obtained readily.

Please inform me through the columns of your paper what is used to give cheese the fashionable color, when applied, whether in the milk or curd, and how much to use, and oblige a Maine farmer's wife. H. A.

Oxford Co., Me., 1869.

REMARKS.—The foregoing inquiry was submitted to Mr. D. W. Heywood, of Barre, Mass., the writer of the article in the FARMER of last week on the cheese dairies of that town, who has kindly and promptly furnished the following communication, which, as will be seen, is not only an answer to the inquiry of Mrs. H. A., but a brief description of the whole process of cheese making. Mr. H. says the information was obtained from an intelligent cheesemaker, who has had charge of one of the Barre factories from its very start, and is therefore reliable.

Mr. Heywood's Reply.—When the morning's and evening's milk are united, strain the evening's milk and cool it with ice, or with cold well water, which may be done by placing the pails in tubs partially filled with cold water. In the morning take off the cream, mix with it twice the quantity of new milk. Add warm water enough to raise it to the temperature of 98°. Rub annotto through a silk cloth sufficient to make the curd of rich cream color. Put sufficient rennet into it to curd in twenty minutes. The curd thus formed is vigorously stirred after it has been raised to the temperature of 85°. To attain this temperature, use a vessel of warm water, or add warm water to it, as by putting it over the fire the least burning will spoil the cheese. While the curd is setting, cover with a cloth to prevent the surface from cooling. One-fourth pound salt to twenty pounds cheese is considered the right seasoning. Express all the whey.

At cheese factories the annotto is first dissolved in water, and then soaked in a weak solution of lye. In consequence of the adulterations in annoto there will be found a great difference in this article, so that no rule can be given in regard to a definite quantity, and the eye alone must be the guide. The superiority of factory cheese over that manufactured at home, lies in the fact that every process throughout is done well, or, in the vernacular of cheese-making, the curd is "well cooked." There is now some degree of competition between rival factories to obtain the largest number of

pounds of cheese from a given quantity of milk; so that it is not always the case that the whey is fully expressed. Such cheeses prematurely sour and become unfit for the table. Private dairies may yet, therefore, bear off the palm.

Mr. Willard while in England visited an annotto manufacturer, whose preparation is regarded as the best in that country. After conversing with him and with some London chemists, he concluded that all preparations of the article depend rather on its purity than on the preparation. All the best English annotto is cut with potash. To obtain a pure article he advises that it be purchased of a reliable person who is a good judge of it.

The American Cyclopædia says that annotto, a word which is variously spelled, is the name of a "red coloring matter extracted from the outer part of the seeds of an evergreen plant called the *bixa orellana*. Dissolved in an alkali, as a crude pearlash, its color changes to orange. It is more adulterated than almost any other article of commerce. It has been purchased containing over sixty per cent of chalk, and is often contaminated with red lead, so that cheese colored with it has been made poisonous."

At the late convention of cheese-makers at Elgin, Ill., the subject of coloring cheese was discussed. Mr. C. H. Wilder, of Evansville, Wis., said, "the practice of coloring milk or cheese, which is done by most cheese-makers East and West, is not only useless, as it adds no improvement to the cheese in richness or flavor, but is a waste of money, more so than is generally calculated, for in addition to the cost of the coloring matter, which is now no small item, the alkali necessarily used to dissolve the annotto in its preparation for the milk, neutralizes a considerable part of the rennet, so that more must be used to coagulate the milk than would otherwise be necessary."

Others followed with similar remarks; and the only defence of its use was based on the demands of the consumer, who requires that his cheese shall have a rich dandelion-butter appearance.

CULTIVATION OF CRANBERRIES.

Can you or some of the readers of the FARMER inform me whether it is profitable growing cranberries? I have a number of acres of swamp land that can be flowed. Some say it is very profitable on land so situated. If so, I intend to try an acre next season, and would like to be informed through the FARMER about the mode of preparing the ground for the vines and the setting of them out and where I can get them, &c. C. P. LUTHER.

North Dorset, Vt., June 23, 1869.

REMARKS.—We mail to your address copies of the NEW ENGLAND FARMER containing Mr. Hersey's articles on cranberries, thinking that you may be one of the many new subscribers that have been added to our list recently. If you are entirely inexperienced in the cultivation of cranberries, would it not be better to begin with a small patch at first? Cranberry vines are sold every year by those who make a business of selling them, but might not enough be learned and enough be saved by digging your own vines, to pay the expenses of a journey to the nearest cranberry patch from which you can contract for a supply? Cranberry raising, like all other kinds of business, is a trade, and whoever goes at it must serve an apprenticeship. There is no royal road to success in any thing.

CHEAP PAINT FOR BARNS.—COAL TAR FOR ROOFS.

I would like to inquire through the FARMER how to make a cheap kind of paint to paint barns and outbuildings, that will be durable and look well, so that a poor man that happens to have a good barn can have it painted. In this vicinity they use mostly the Brandon paint; but it soon looks old, and in order to keep a building looking well it must be put on often, which makes it about as expensive in the end as white lead.

Is it profitable to put coal tar on the shingles to preserve them, and how often must it be applied to long shingles to keep them from wearing out?

Cabot, Vt., June 22, 1869. C. M. FISHER.

REMARKS.—No paint, we believe, withstands "the tooth of time" better than Venetian red. There are houses in some country towns painted red so long a time ago that the memory of man runneth not to the contrary, and they look fresh to this day. The wood is admirably preserved, and appears as though it would not need another coat of paint for a quarter of a century to come. But, then, who would have *such* a color, on house or barn, some people would say? To our eye it does not look badly when the trimmings receive a shade somewhat different from the body of the building. In point of economy, there is probably nothing better. We would not shock the taste of any one by advising the use of red paint on a house or barn, but think we could live comfortably in a house so painted, all other things being agreeable.

For a cheap, white, silver or pearl gray "paint," a correspondent of the NEW ENGLAND FARMER gave, a few years ago, the following receipt for making a composition which he had used and found to be durable, cheap, and economical:—Skim milk, two quarts; fresh slacked lime, eight ounces; linseed oil, six ounces; white Burgundy pitch, two ounces; Spanish white, three pounds. The lime to be slacked in water, exposed to the air, and mixed in about one-fourth of the milk. The oil in which the pitch is previously dissolved to be added a little at a time; then the rest of the milk, and afterwards the Spanish white. This quantity is sufficient for twenty-seven square yards, two coats. If a particle of blue be added, or if this blue be combined with a slight portion of black, a silver or pearl gray will be obtained. The addition of raw umber will make a brown. It will be necessary to keep it stirred in the bucket while using.

Petroleum, benzine, &c., have been tried, for dark paints with various success. Some complain that it does not harden properly. The editor of

the *Country Gentleman* has used petroleum with good success. He advises the application of a coat of light petroleum alone first, and then after a few months give a coat of the heavier petroleum mixed with the ochres or other paint. He has seen such a coat on a barn of six years' standing, hard and unchanged. It is recommended for roofs as well as for the sides of buildings.

With coal tar on shingles we have had no experience. The *American Agriculturist* says, soon after gas or coal tar became abundant it was utilized in many ways, and more or less as paint for wood and metals. Upon metals it gradually dried and formed a varnish-like surface little acted on by the weather. On wood a similar surface was formed, but not altogether by evaporation, for a portion of the tar struck in, and though it looked well ("black, but comely"), the result proved that when exposed to moisture, tar-coated wood would absorb it more or less, and generally decay quicker than if not coated at all. This is the case probably when shingle roofs are coated with tar. The practice is now generally, if not universally, condemned.

SANFORD, YORK COUNTY, ME.

With the exception of hay, the crops in this section look very promising, and are at least a week in advance of same time last year. Though we have had little very warm weather, vegetation is pushing along very fast. We are having plenty of rain, and farmers are busy thinning out "the tares that spring up to choke" the plants, preparatory to the approaching haying season. In consequence of winter-killing, hay will be rather light. There is very little old hay on hand, and that little will be held on to, not for a "big price," but to be fed to stock the coming winter.

The farmers of Sanford, though perhaps rather behind some of their neighbors in respect to the improvement of stock, are moving in the right direction. Durham and their grades are taking the place of "scrubs." Still, farmers are somewhat discouraged by the probability of low prices for stock this fall.

Wheat enough to furnish their own families with flour is raised by many of the farmers here, and some have a little to sell. The crop averages about twenty bushels per acre, one year with another, and the crop this year promises to be a fair one. Though the farms are not large, the soil is good, and few farming towns in New England can show better buildings than Sanford.

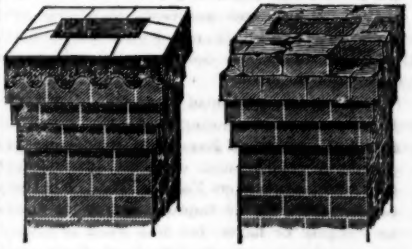
The township comprises about fifty-six square miles, and is situated on the Mousam river, which though only twenty miles in length, furnishes twelve good water privileges. There are two villages in the town; Sanford Centre and Springvale, —of which the latter is the largest. Here are a cotton mill with 125 looms; the shoe factory of Messrs. Cummings, employing about 100 men and girls; a saw, shingle and clapboard mill, a flour mill, &c., with some ten stores, two churches, &c. The village is adorned with fine shade trees, and greatly increased railroad facilities are soon expected.

Springvale, Me., June 26, 1869. ZEN.

REMARKS.—Our correspondent, "H. C. P.," writing at Garland, Penobscot County, says that as there was plenty of snow in that section, last winter, grass did not winter-kill as in the more southern part of the State, where there was less snow and more rain and sleet, and is looking quite well, though the crop may not be quite as heavy as last year. He mentions particularly some splendid looking grass on the farm of Warren Percival, Esq., of Vassalboro', which was estimated at two tons per acre,—the result of good management and high manuring.

CHIMNEY CAPS.

The jagged tops of many chimneys that we see remind us of the sailor who, while listening to the wailings of a tempest as it played among the shrouds of his ship in the open sea, pitied the poor landsmen whose heads were exposed to falling bricks and other perils by land in such a storm! But these fugitive bricks sometimes fall inside as well as outside of the chimney; and thus not only endanger those outside of the building, but by clogging up the flue obstruct the draught and fill the interior with smoke. To remedy all these evils, Mr. E. Myrick, of Groton Junction, Mass.,



has invented and patented a cast iron chimney cap, which being made in sections, corresponding to the length of bricks, is adapted to chimneys of all sizes. The sections being firmly locked together secure the chimney-head effectually. They are cheap, durable, and, as will be seen by the above illustration, are neat and ornamental.

OBSTRUCTIONS IN COWS' TEATS.

Last year one of my neighbors had a cow troubled with an obstruction in one teat, very near the orifice. It seemed to act like a valve; when squeezed no milk could be obtained. Various methods were tried, such as inserting quills, knitting needles, &c. These seemed to irritate. It finally got so inflamed and sore that he was obliged to dry the cow, which was fattened and sold for beef.

He purchased another valuable cow to take her place, and in about a fortnight after she calved she was taken in precisely the same way as the other. Any amount of squeezing would not bring a drop of milk. A quill was inserted as before; but it was very painful, and it took two of us to perform the operation. It was evident that unless some other method could be devised the milk would cake, and the bag, and perhaps the cow, be spoiled.

I then ordered for him one of Barland's English Cow-milking Tubes, which came promptly by return mail at a cost of forty cents. Part of the bag was by this time inflamed and the milk had begun to curdle. The tube was inserted without the least pain or trouble,—the cow never wincing. It required a little pressure at first to remove the curdled milk, but afterwards it run freely until

that part of the bag was completely evacuated. The tube was used for two weeks, when the teat became all right, and remains so at the present time. These tubes are silver plated, about two inches long, and should be in the hands of every farmer, as many times their cost can frequently be saved by having them at hand when needed.

Cows frequently lacerate their teats while in the pasture, and every time they are milked, the wound is torn open afresh; consequently it is a long time healing. The operation of milking is also painful to the cow, and she will not give down her milk freely; so that, many times, the flow is considerably decreased by the time the teat is well. This can all be avoided by the use of one of these little tubes. S. C. PATTEE.

Warner, N. H., July 5, 1869.

ASHES ON WHEAT.—DRY GRASS IN A PASTURE.

Do you advise the use of ashes on wheat fields? If so, how should it be applied?

I have a pasture that has grown up for several years, and become so thickly covered with the dead and withered grass that my cattle wont feed it. What is the best remedy? Would you advise burning it over? A YOUNG FARMER.

Buckfield, Me., 1869.

REMARKS.—Sow ten bushels per acre of wood ashes on your wheat field at the time of sowing the seed. Scarcely anything would be better. Scatter by hand, broadcast.

Cut the bushes, if there are any, and burn over the pasture. Then scatter a bushel or two of plaster of paris to the acre, and on that a little white and red clover seed, together with a small quantity of timothy and red top seed, and harrow the whole in. If your labors are favored by the season you will need large milk pails next summer.

BLACK-LEG.

The loss of five calves by Black-leg, mentioned by your correspondent "Luther," of North Dorset, Vt., in March last, would not have been thought an uncommon occurrence in the higher parts of Virginia near the Alleghany mountains thirty or forty years ago, nor is it very uncommon to hear of a few dying almost every year now. But the disease is better understood there now than it was then. It is considered to be almost, if not entirely, produced by a change in the condition of the flesh, owing to a change in the quantity or in the quality of the food of the animal; that is, such sudden *decrease*, or *increase* in flesh, as is most likely to take place in the fall or spring. Formerly that disease was quite common at both seasons in that region. It was then customary for farmers to summer more stock than they could winter well; consequently as it was taken in the fall from their new and luxuriant grass fields, their animals often shrunk much in flesh, and sometimes *suddenly;* then in the spring when the stock, after being badly wintered, was all at once turned on rank grass they would often gain rapidly. Hence losses from Black-leg were common both spring and fall.

This disease was the greatest difficulty in raising stock that the people had to contend with there at that time. I have known in the bounds of my acquaintance more than one hundred to die in one fall, or in early winter. Indeed, I have no doubt that in two or three counties more than a thousand were lost yearly. Some persons almost gave up the idea of raising stock. After a while the cause was better understood and people began to take better care of their stock in the fall and winter, and such losses became less frequent. Black-leg is seldom spoken of now, except in connection with the remark that "that man is too careless with his stock;" especially is this remark used in the fall season.

I have known my father to lose twelve or fifteen in one fall, and at other times a less number, all of Black-leg. But after we come to know something of the nature of the disease we were well assured that it was all for want of proper care and attention, and this is now universally believed to be the only cause of the disease.

It is, though, much harder to guard against a change in the condition of the flesh in the spring, than in the fall; but then it is not near so likely to result fatally at this season as in the fall.

It may be proper to say that in later years it has been common to use sulphur, saltpetre, or copperas, with salt, and frequently soot, ashes and lime, as preventives, especially when first turned on fresh grass in spring, and also profuse bleeding. This practice of bleeding arose mostly from the fact that it had been found to relieve some cases after an attack of the disease. I have lost many animals by the Black-leg, but do not remember of a single case of my own that recovered. I did, however, know of one very bad case, where the hind leg of a calf was ripped open for more than a foot, and salt put in; the calf lived and got well; which I could not have believed had I not seen it myself.

West Virginia, June, 1869. J. H. R.

REMARKS.—This disease is called black quarter in England, and charbon in France. It is one of the forms of the disease called Anthrax, a Greek word, meaning coal. Mr. Murray, the Veterinary editor of the *Western Rural* says, "it is characterized by a peculiar alteration in the blood and tissues of the affected part. The tissues and blood of the part affected become much darker in color, and this has led to the term anthrax being applied to maladies of this nature." He agrees with our correspondent as to the cause of the disease, and says it makes its appearance suddenly, and is first indicated by the animal being lame in one of its legs. On pressing the skin of the affected quarter a crackling sound is produced, and on the skin being incised black colored blood issues from the wound. He also quotes Prof. Bouley, who has made the most recent investigations on the subject. The Professor says that the blood in this disease undergoes a change rendering it almost identical with putrid blood. He recommends the internal and external use of carbolic acid. In using this medicine he advises that incisions of two or three inches in length should be made through the skin of the affected quarter, and that the incisions should be washed with a solution composed of half an ounce of carbolic acid to a pint of water. The acid should be given internally twice a day in drachm doses, each dose being given in a quart of cold water.

TO RELIEVE CHOKED CATTLE.

In looking over your last issue I see a remedy, taken from the *Country Gentleman*, to relieve choked cattle, which prompts me to write to you. I think if eggs were given, as recommended, it would be pretty sure to relieve them by death, if the animal were choked by a potato or apple, as the swallowing pipe being stopped up, anything

turned into the mouth must go down the breath-pipe, which must cause suffocation. I will give you my way to relieve choked cattle. If the substance that they are choked with is above the brisket, so that you can feel it, place your hands back of it, and, with your thumbs on each side of it, gently and gradually shove it up and out. I have relieved a great many, and have never tried in a case but what I was successful.

LEVI DAVENPORT.

Colerain, Mass., June 28, 1869.

BOTS IN HORSES.

Enclosed in box you will find two worms, a sample of the kind of many that have passed my horse within the last few days. What kind are they, what do they originate from, and what shall I do to get rid of them? A SUBSCRIBER.

Quidnick, R. I., July 2, 1869.

REMARKS.—The specimens sent are bots. We copy the following excellent illustration of a group of bots attached to the stomach of a horse, and a full history of the Bot, from "Stonehenge, McClure and Harvey on the Horse," a very complete work, recently published by Porter & Coates, Philadelphia:—

The larvæ of the *œstrus equi*, a species of gadfly, are often found in large numbers, attached by a pair of hooks with which they are provided, to the cardiac extremity of the stomach; they are very rarely met with in the true digestive portion of this organ, but sometimes in the duodenum or jejunum in small numbers. A group of these larvæ, which are popularly called bots, are represented by the annexed cut, but sometimes nearly all the cardiac extremity of the stomach is occupied with them, the interstices being occupied by little projections which are caused by those that have let go their hold, and have been expelled with the food. Several of these papillæ are shown on the engraving, which delineates also the appearance of the bots themselves, so that no one can fail to recognize them when he sees them. This is important, for it often happens that a meddlesome groom when he sees them expelled from or hanging to the verge of the anus, as they often do for a short time, thinks it necessary to use strong medicine; whereas in the first place he does no good, for none is known which will kill the larvæ without danger to the horse, and in the second, if he will only have a little patience, every bot will come away in the natural course of things, and until the horse is turned out to grass, during the season when the œstrus deposits its eggs, he will never have another in his stomach.

Group of Bots attached to the Stomach.

The *œstrus equi* comes out from the pupa state in the middle and latter part of summer, varying according to the season, and the female soon finds the proper nidus for her eggs in the hair of the nearest horse turned out to grass. She manages to glue them to the sides of the hair so firmly that no ordinary friction will get rid of them, and her instinct teaches her to select those parts within reach of the horse's tongue, such as the hair of the fore legs and sides. Here they remain until the heat of the sun hatches them, when, being no larger in diameter than a small pin, each larva is licked off and carried down the gullet to the stomach, to the thick epithelium of which it soon attaches itself by its hooks. Here it remains until the next spring, having attained the size which is represented in the engraving during the course of the first two months of its life, and then it fulfils its allotted career, by letting go and being carried out with the dung. On reaching the outer air it soon assumes the chrysalis condition, and in three or four weeks bursts its covering to become the perfect insect.

From this history it will be evident that no preventive measures will keep off the attacks of the fly when the horse is at grass, and, indeed, in those districts where they abound, they will deposit their ova in the hair of the stabled horse if he is allowed to stand still for a few minutes. The eggs are, however, easily recognized in any horse but a chestnut, to which color they closely assimilate, and as they are never deposited in large numbers on the stabled horse they may readily be removed by the groom. Unlike other parasites, they seem to do little or no harm, on account of the insensible nature of the part of the stomach to which they are attached, and, moreover their presence is seldom discovered until the season of their migration, when interference is uncalled for. On all accounts, therefore, it is unnecessary to enter into the question, whether it is possible to expel them; and even if by chance one comes away prematurely it will be wise to avoid interfering by attempting to cause the expulsion of those left behind.

Dr. Dadd says, in some of his later books, that though he once believed, as most of the veterinary schools teach, that bots are harmless to horses, yet the facts of his experience and observation had forced him to a different conclusion. In one case where a horse died in his presence, "the autopsy revealed the presence of a large cluster of bots, numbering two hundred and seventy-five, located within and around the lower part of the gullet, and just within the entrance of the stomach; and so completely obstructing the passage that it was impossible for the food to pass," and he had no doubt that bots were the exciting cause of the death of the horse.

In one sense, all parasites may be said to be "natural"—lice on animals and trees, borers, tape worms, flies, fleas, ticks, grubs, &c, &c. But when in excess, if not at other times, all these are known to be injurious to the health and vigor of the plant or animal on which they prey. The scale louse, notwithstanding "the insensible nature" of the bark of an apple tree, will, if numerous, check its growth, if not destroy its life. Why then may

not the bot prove injurious to the horse, as grubs do in the head of a sheep, or in the back of a cow? Still it is probable that bots do less injury than is popularly supposed, and that the books are nearer right than many believe.

The fact that bots are found in healthy horses when killed by accident, might only show what is generally understood to be true, that parasites often remain apparently inactive and harmless in ordinary states of the health of their victims, but in case of weakness, or fatigue, or fasting, or a cold, or other illness, they cause trouble and not unfrequently death.

But be this as it may, we have little faith in the efficacy of the multitudinous remedies for bots, with which horses are dosed. Regularity in feeding, with an occasional run at grass, or feeds of carrots or other roots, to preserve the general health, we should recommend instead of "powerful doses" of any kind. Mr. Youatt says, bots "cannot be removed by medicine because they are not in that part of the stomach to which medicine is usually conveyed; and if they were their mouths are too deeply buried in the mucus for any medicine that can be safely administered to affect them; and, last of all, in due course of time they detach themselves, and come away."

DUXBURY, VT.

Duxbury in Washington County, lies south of Winooski river, nearly opposite to Waterbury. It is almost entirely an agricultural town,—the dairy business being the most prominent as well as most profitable. The lumbering business is carried on to some extent in the section of the town nearest to the railroad.

It has within its boundaries the celebrated mountain known as Camel's Hump; being the second highest mountain in Vermont. The view from the top is said by some tourists to be the finest in the State. Some of our boys had some rare sport one week this spring bear hunting. The trophies of the chase were an old bear and two cubs; the old one was driven to her den and shot by the glare of her eyes, Gen. Putnam style.

No town in the State can show a better war record than Duxbury, for its population. Strong young men filled up our quotas, and were marched quickly to the field; too many, alas, never to return. The old army coat or blouse, with the fatal bullet hole in it, or the faded cap, hang in many a closet in what appears to be happy thriving homes, as sad relicts of the lost and mourned.

The past winter was one of the longest foddering seasons I ever knew, and all kinds of fodder was used up in this section. If it had not been for the generous supply of Western corn, it seems as though some of our cattle must have starved.

Duxbury, Vt., 1869. O. H. C.

BARLEY.

What kind of barley is the most profitable to raise,—the bald or bearded? When should it be sowed? FRANK.

Woodstock, Vt., June, 1869.

REMARKS.—We prefer the bald. Sow as early in May as the soil will admit, on a sandy, or even a gravelly loam. It requires a warm, quick soil, but one moderately rich.

AGRICULTURAL ITEMS.

—A dairyman informs the *Maine Farmer* that having tried various things for sore teats on cows, he finds lard best, the most healing and softening.

—A patent has been obtained for the manufacture of water-proof paper. It will be no uncommon thing, by and by, to carry a quart of milk home in a paper bag.

—At the recent Horticultural Fair at Rochester, N Y, several gentlemen stated that the currant worm would not disturb bushes under which coal ashes were liberally sprinkled.

—Corn may be sown up to the middle of July, or later; and that which is not needed for green fodder, should be cut and cured for winter use before the frost cuts.

—Anson Parker, of Londonderry, Vt., lately took an elm tree root from the bank of the river which measured forty-two and one-half feet in length, with a diameter in the largest place of three-eighths of an inch.

—To protect cabbage plants from cutworms take last year leaves—oak is good—make moist with water, wrap once around the stem, when transplanting, extending from roots to a little above the leaf stem.

—The cabbage fly is committing ravages in Maine. It was first seen in America in Quebec in 1854, and was probably brought to the States in grain from Canada. It strongly resembles the common butterfly in general appearance.

—A. M. Winslow & Sons, Putney, Vt., lost two bulls recently valued at $4000, through the carelessness of a hired man, who washed the animals all over with tobacco essence for the purpose of destroying the lice, but the death of the bulls was the consequence.

—The West Milton Cheese Factory is now using 13 000 pounds of milk daily, from some of the best dairies in Vermont. Many of these dairies have native cows which average thirty, thirty-one and thirty-three pounds daily. The factory is turning out each day twenty-one and twenty-five cheeses, averaging about sixty pounds each.

—The *Rural New Yorker* publishes statements of two fleeces of wool shorn this season in Central New York from Merino rams two years of age, which weighed thirty-five pounds each. One fleece is to be scoured, while the owner of the other does not care to be at the trouble and expense of the operation.

—The Missouri *Journal of Agriculture* gives an account of a family of seven persons who stopped at a village through which they were moving and bought a sugar-cured ham. Being quite hungry six of the seven individuals ate some of it raw. All who ate of it soon became sick. A girl fourteen years of age had died from the effects of *trichina spiralis* in the ham. In a portion of the muscle of the arm of the girl that died, of only one-eighth of

a cubic tenth of an inch, Dr. Hay of Chicago, counted with a powerful microscope forty-five of these minute worms.

—Last year the Mormons at Utah artificially irrigated and made fruitful 93,799 acres of land. Altogether, they had a large amount of land under cultivation: 80,518 acres of cereals, 1,817 in sorghum, 6,838 in root crops, 166 in cotton, 29,876 in meadow, 906 in apples, 1,011 in peaches, 75 in grapes, and 195 in currants. The larger part of these lands are artificially irrigated.

—It is not generally known that wool-growing in South-America has grown into such mammoth proportions as it really has. Even the Australian breeders have cause for alarm from this competition. It is reported on good authority that the number of sheep shorn there annually exceed 70,000,000. The exports of wool to Europe and the United States amounts to 230,000,000 pounds.

—A cup of coffee is a fair barometer, if you allow the sugar to drop to the bottom of a cup and watch the bubbles arise without disturbing the coffee. If the bubbles collect in the middle, the weather will be fine; if they adhere to the cup, forming a ring, it will be rainy; and if the bubbles separate without assuming any fixed position, changeable weather may be expected.

—A correspondent of the *Country Gentleman* weighed the hay that he had bought as a ton by allowing 500 cubic feet, and found it weighed only 1480 pounds. The hay was mostly timothy, with some clover and white daisy. The hay was over a basement, part two and part four feet deep, pressed with straw, but on pitching he found it was not as solid as he expected.

—A Western horticulturist has "discovered" that grape cuttings on a sunny and sandy slope root earlier than elsewhere, and he proposes to get out a patent to prevent others from using soils thus favorably situated. He has also "invented" a cellar of the right temperature and moisture for preserving vegetables, &c., and proposes to patent that also.

—A correspondent of the *Rural World* finds an ordinary hot-bed a capital place for drying fruit. A floor is laid inside on which to place the fruit. Then put on the sash, but be sure to raise both the upper and lower ends about two inches, to admit of a free circulation of air, or the fruit will bake as it would in an oven. Here the fruit will not be wet in a shower, nor will it be troubled with insects, which will be kept away by the covering and the intense heat. Parboiled green corn has been sufficiently dried in one day, in this way.

—Mr. Willard, in his address before the Wisconsin Agricultural Society last fall, stated that Mr. Fish, of Herkimer Co., N. Y., experimented in breeding cattle for milk alone, and succeeded so far as to make his herd give an annual average yield of between 800 and 900 pounds of cheese per cow, but that the constitutions of the animals became so impaired and weakened that it did not prove profitable. Mr. Willard thought all we should ask was for cows that will yield 500 or 600 pounds of cheese, and that can be easily made ready for the butcher.

—Mr. W. W. Glusher, of Madison County, Indiana, writes to the *Prairie Farmer*, that he has a Magee sow, that has given birth to sixty-nine pigs in a little less than twenty-nine months. They were dropped as follows:—January 27th, 1867, eleven; December 25th, 1867, sixteen; June 16th, 1867, five; August 22d, 1868, eight; January 11th, 1869, thirteen; June 15th, 1869, sixteen.

—The *Maine Farmer* says that a new society was formed at Monroe, June 26, called the Waldo and Penobscot Agricultural Society, with the following officers: *President:* W. B. Ferguson. *Vice President:* T. Mayo. *Treasurer:* A. H. Mayo. *Secretary:* F. A. Piper. *Trustees:* S. F. Mansur, Monroe; Bidfield Plummer, Winterport; Eli C. West, Frankfort; Rufus Littlefield, Prospect; James Nickerson, Swanville; Capt. James Huxford, Brooks; J. J. Chase, Jackson; Joseph Gilman, Dixment; Albert Whitney, Newburgh. The Society propose to hold a Fair early in the fall.

FREE PASTURAGE AT THE WEST.

When the new beginner at the West ploughs up five, ten or more acres of land, he builds a fence around it, which generally includes his house, and barn if he has one. The highways and all the other lands in the neighborhood are considered "unoccupied," and are common pasturage. This furnishes abundant forage for stock until about harvest time, when it becomes scarce or tough, and the more enterprising animals lead off the herds in quest of something better. Accustomed to shirk for themselves, these cattle become very unruly, and an old leader soon learns, like Job's Leviathan, to esteem fences as but straw, although built of heavy rails and to a height which to a New England farmer at first sight seems unnecessary.

Many years ago one of the editors of the NEW ENGLAND FARMER cultivated a field of corn adjoining an Indian Reservation of two square miles in Michigan, which, with a large portion of the other land in the vicinity, was the common pasturage of the whole neighborhood. While standing sentinel in his cornfield he has seen an "old ranger" walk deliberately up to a corner of the Virginia fence, and, beginning at the top, scatter the heavy rails as a child does its cob-house. Another bullock, too lazy to hook, would deliberately

lean his body against the fence, and if not too strong would crowd it over. Others would leap the fence like deers, or throw the weight of their forward parts upon it and crush it down. Hogs, too, would worm themselves through or under carefully built fences. With horses we had no trouble, as there were but few in the neighborhood.

All this is exceeding annoying to one who has watched the growth of his first crop with an interest which can be appreciated only by the new settler, and who looks upon it as the only means of subsistence for his family during the approaching winter. It engenders ill feelings towards one's neighbors and dissatisfaction with the new home. It disheartens, and stirs up the "homesick" more perhaps than anything else that is experienced in making a farm in a new country.

A correspondent of the Missouri *Rural World*, in an article advocating some change in the laws of the State respecting cattle running at large, makes the following statement, which recalls most vividly our own experience, and which may be suggestive of the experience of many New England farmers who are about emigrating to the West:—

Our prairies are covered with breachy cattle and horses. Horses that will jump over five feet, without touching, are constantly preying upon wheat fields and corn fields; they nip grass in the day and do mischief at night. Cattle do little damage until corn ripens; then the grass begins to dry up and they seek something better. One of my neighbors is engaged in raising horses and mules; another has one hundred and six head of Texas cattle; others from three to fifty head—all unherded.

Last summer one of my neighbors put eight acres of corn in a field, inclosed by a worm fence, six rails high. He attended to his crop until the middle of July, when the horses entirely destroyed it by night. Early one morning I drove eleven head out of the field. Another neighbor, by working early and late, inclosed a field with posts and poles. He put in twelve acres of sod corn. Neighbor Mule Raiser's stock ate it up by nights, just as it was ripening, although the owner worked desperately to save it. Thus, working all summer to make a crop, and all winter to make up for its loss—a year of toil and care has left these neighbors poorer by far than they were a year ago. One neighbor had a good eight-rail stake and ridered fence knocked down by stock several times last year.

I have talked with several men upon the subject, and have yet to find one who did not suffer more or less by the depredations of stock last year. The Mule Raiser's mules and horses may be found every night or so in a twenty-acre wheat field near my house. If a man has his fields inclosed by a lawful fence, and can find out to whom the stock belongs, he may obtain redress by employing a lawyer and having a law-suit; or I should say a dozen suits for the same number of horses belong to as many different parties. If his fence is unlawful, there is no remedy. In the western and southern parts of the State, not one-third of the fences are lawful. Timber is very expensive and so scarce that a large majority have contented themselves with Shanghae fences until they can raise hedges.

A POOR MAN'S ROLLER.

A writer in the *Prairie Farmer* says, "we are making and using a machine which in many respects is preferable to a roller, and very much cheaper, and within the reach of every man who has a saw, hammer, nails, and a few boards or plank. Take plank about twelve inches wide, two inches thick and eight feet long; lay them flat with the edge of one just upon the edge of another; then take a piece of scantling, two by four inches, hard wood if convenient, and cut it to fit upon the top of each plank to hold them together; three of these pieces firmly nailed or bolted to the plank, one near each end, and one in the centre. Near each end of the first plank laid down, bore holes for a clevis, to which attach a chain as used on road scrapers, and the work is done—the thing is made and ready for use; but who will name it?"

We would suggest that it be called the leveller. We are reminded by the above description of a machine which we saw a few days since, which did very excellent work in smoothing and working the soil to very fine tilth. It was a small harrow with fine teeth, of a somewhat peculiar form, which may be used by itself as a horse hoe. To the hind part of this harrow has attached by a chain and clevis a platform—the under face of which resembled the leveller described above. It was about four feet wide by five long, made of hard wood scantling, about four inches thick by eight wide, held together by iron bars on the upper face, firmly bolted on. Holes were made, as in the one described above, through the end bars and scantling for the clevis. This harrow and leveller worked by two horses, is a very efficient implement. The platform may be loaded with as much weight as may be desired. The implement described in the *Prairie Farmer* follows the harrow drawn by another team. In the one we saw the harrow and leveller are drawn by the same team at the same time. It may be detached from the harrow and used separately, in which case a lighter team would be sufficient.

FATTENING SHEEP IN WINTER.

DURING the annual winter meeting of the New York State Agricultural Society at Albany, last February, a paper was read on "The Fattening of Sheep in Winter" by Jurian Winne, Esq., of Bethlehem Centre, Albany county, New York, which has been published in pamphlet form. Mr. Winne has been engaged in fattening sheep for about twelve years, and for several years past Mr. Henry Goodnough of Brighton has purchased a portion of his feeding for this market, where the mutton bears a high reputation. Last spring while Mr. Winne was at this market with some of his sheep, he called upon us, and we had a few moments conversation with him. Having frequently heard the superior quality of his mutton spoken of, and having understood that his farm was near the city of Albany, we had supposed that probably he was some "side-walk farmer," who, having made a fortune in commerce or other business, had retired and was fattening sheep as an amusement or relaxation, and with more regard to a good reputation for the style of his goods than to the cost of their production. He informed us, however, that he was "nothing but a farmer," and had never engaged in any other business. The land he tills has been in the possession of his ancestors since the first settlement of the country, and had become so badly run out that, in his own words, "it would hardly grow a crop of good beans." He therefore went into the sheep-feeding business more with a view to the consequent improvement of the land than to make the ready dollar. He says in his pamphlet, as he stated to us, that,—

In this I have fully succeeded. I wanted to make two spears of grass grow where but one grow before, and I am sure I am getting three, some of my neighbors say four; however, I call it three. The meadows that used to cut from one-half to one ton of hay per acre, now yield on an average over two. Raising rye was then out of the question; last year I got from about sixteen acres, four hundred bushels of rye, and straw enough to have amounted to near nine hundred dollars, if I had sold it (which I never do, unless I replace it by hay for bedding, as I have done this year, getting three tons of hay for one ton of straw) This year I got from forty-five bushels sowing, fifty loads.

But though thus successful himself, and willing to communicate to others the whole art and mystery of the business, so far as one man can convey to another his acquired skill and the teachings of his own experience, he adds the following caution to those who may be disposed to attempt to follow in his footsteps:—

I must say, that with all the experience and precaution in buying, good fixtures, plenty of feed, litter, care, &c., you will not always succeed. For though I have for the last twelve years studied the thing closely, and carried it out carefully, in spite of all my efforts I have not always made money, and would almost guarantee that out of every ten new sheep feeders, eight will probably feed but one year. When a friend asks my advice on the subject, I always say to him, try twenty-five or fifty, and then if you like it, get more the next year. Some have looked upon this advice as selfish, and given to keep others out, and have rushed into the business, and not only the first year made no money, but actually lost nearly half their investment. We used to have several sheep feeders in this and adjoining counties, and as the principal feeders have all left the business except myself, I think this is pretty conclusive evidence that what I now say is about right.

A person to succeed in sheep feeding, must do it because he likes to do it—because he prefers to feed sheep and see them eat, to any other business done in winter; and although he may not be able or willing to do the work himself, still he must take delight in seeing it well attended to, if he expects to prosper. He should be sure to see every sheep he has, at least once a day, when, if he understands his business, he can tell at a glance whether they have been properly cared for.

If our space permitted we should copy the whole paper, but must content ourselves with a few extracts.

Stock for Feeding.

My first rule is, always to buy good stock, whatever the breed may be, and to be sure to select animals kindly disposed to fatten. The price of well bred sheep may appear to be high, but depend upon it, if there is no money in feeding good stock, there is no money in poor. A one-dollar sheep will consume about as much feed as a six dollar one, and as neither of them can be fed through the feeding season for much short of five dollars a head, you will readily perceive that the one dollar sheep would stand you in six dollars, the other eleven dollars.

According to my experience, the one-dollar sheep would weigh in the spring about eighty pounds, and sell for seven cents per pound, which would make five dollars and sixty cents—a loss of forty cents; when the six-dollar one would weigh at least one hundred and twenty-five pounds, and sell for ten cents per pound, making twelve dollars and fifty cents—a profit of one dollar and fifty cents, besides getting the credit in the one case of bringing good stock to market, and

in the other such as will be hooted at, and reported for you as *scalawags*. Now, as every good citizen values his reputation (and what is a man good for without it,) I think this last item should not be lost sight of.

In my twelve years' experience in feeding, I have found the breed of sheep to have much to do with their early maturity, weight and fattening qualities. I have had Leicesters and their grades, Cotswold grades, South Down grades, Merinos and their grades, and have always found that whenever the Leicester blood predominated, I had an animal that would fatten quick at an early age, and make good weight, and have had no trouble when the animal has been half or more of Leicester blood, with good keeping, to make him dress one hundred pounds of mutton at twenty months old. As to fine wools generally, I am fully convinced they will not make me more than half the money for winter feeding that coarse wools will.

Conveniences for Fattening.

After describing the general arrangement of his barns, he says: —

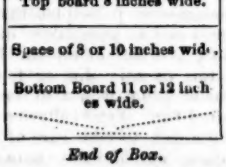
The next building I shall mention, which I will call shed No. 1, is twenty-one by twenty-four feet, sixteen foot posts—on the south side of the barn. The upper part of this building is filled in summer with market hay, which is pressed out and sold in the fall, the floor covered with sawdust and leaves. I always advise when practicable, to put in the sawdust before harvest on the upper floor. It then has time to get nice and dry, thereby not only preserving the floor better, but also absorbing the more liquid manure from the animals. When the time arrives, forty sheep are put up and kept there until they are sold in the spring. Of all my feeding yards and stables, I always find that these second-story sheep do the best. The lower part of this building has manure piled under it in summer, as I always like to have what manure is not used in the spring under cover through the hot weather; it is taken out clean in the fall, and the shed arranged the same as the upper part, and, together with an open yard about twenty-four by sixty feet, holds sixty sheep. These sheep always have the run of this yard with the shed, except when it is stormy, and then they are closely confined to the shed.

He then describes other buildings and sheds of similar construction, but of different sizes, sufficient for the accommodation of the six or eight hundred sheep that he usually feeds.

Feeding Boxes.

After much observation and experiment, Mr. Winnie has adopted a crib or box of which he gives the following description:—

Length 12 or 14 feet; width 22 inches. The bottom, indicated by the dotted lines, slanting from



End of Box.

both sides and resting on a board in the middle, forming a complete trough for grain or roots. The bottom side boards should be 11 or 12 inches wide —then a space left of 8 or 10 inches according to size of sheep— then the top boards, 8 inches wide —the ends and sides to match. Corner pieces of scantling in the inside, of hemlock or oak, as pine will not hold a nail or screw, the latter of which is preferable in putting them together.

The corn or other grain for seventy-five sheep can be put in four of these boxes from a bag on a man's shoulder in one minute; and hay, roots, &c., are supplied with equal facility. The sheep feed quietly, and no fodder is lost, on the importance of which Mr. W. remarks:—

It makes quite a difference whether five hundred sheep waste a pint of grain per day, which I am satisfied was more than my whole flock wasted last winter, or whether they waste half a bushel per day; also whether we waste one hundred pounds of hay per day, or whether four or five hundred pounds will cover the waste for all winter. These wastings are what hurts.

These boxes have only to be turned over and back again, and they are clean. No dirt can get in from the sides, as the space between the upper and lower board is too narrow, and the box being from twenty-eight to thirty inches high, no dirt can get in from the top, consequently when the box is turned over and back again, it is always clean.

What Grain is Best?

I answer, for me, corn is the best for the main feed, although I like a few oats mixed to start with, and have no objections to beans, peas and oil meal, if they do not cost too much. Whenever they cost as much, or more than corn, I dispense with them, as a sheep feeder must count his cost as well as his reputation, if he intends to succeed. Another question arises: "Do you find whole or ground feed best?" For horses, cattle and pigs I prefer ground feed, but for sheep, especially fattening sheep, I choose whole or unground feed. I find that the sheep will grind it just as well as the mill to which we must give every tenth bushel, besides having the trouble of hauling the grain to and from it. I also find that fat sheep will hold up to their full feed much better, especially in soft weather, on whole, than on ground feed; consequently drawing grain to and from the mill, and paying toll, is, in my estimation, labor and money lost.

What Hay is Best?

Emphatically I say clover, but it should be cut early, and cured nice and green. Timothy is probably best for horses, but for cattle and sheep I prefer clover, and would rather have a ton of nice, green, fine clover, than a ton of timothy, although in market one ton of timothy will bring as much as two of clover. I have sometimes fed some timothy hay to my sheep, but always found that it was not the kind for them; they would grow lank and thin upon it—not a very good sign that a fattening animal is thriving well. As soon as they got the clover again they would plump up and look full and nice, and I can assure you unless your sheep look full and plump, they are not fattening very fast.

Straw and Cornstalks.

One feed at noon of nice bright oat, barley or pea straw, I prefer to hay, as they not only relish it, but it is a change for them. Sheep are very fond of variety, and will eat daisies, weeds, thistles or almost anything of the kind that is cut and cured green. Nice green cornstalks are not very bad for sheep, and when I have plenty of them I always feed the sheep with them, at least once a day, and consider them as good as hay. I prefer,

however, feeding them the fore part of the winter, as towards spring they will sometimes contract dampness, and then the sheep do not eat them so well.

Value of Roots.

Mr. Winne says that he has used more or less roots every year since he commenced feeding sheep, and he advises feeders to cultivate them by all means. After stating his mode of cultivation, he thus speaks of their value:—

My experience is, that whenever they are worth at home more than seventy-five cents per barrel, and corn not over from one dollar to one dollar and twenty-five cents per bushel, the corn is the cheapest, and I would use only a few roots as a substitute for green food. I consider carrots and ruta bagas better than common turnips; still by feeding a little more of the latter than the former, I think the sheep do just as well on them.

The importance of keeping the sheep quiet; of supplying good dry bedding; of regularity in feeding, watering, salting, and furnishing them ashes, &c., are urged as essential elements of success in sheep-feeding. So important is quiet and comfort to fattening sheep that the effects of the presence of a stranger in their yards or stables for a few moments will be perceived for a whole day afterwards; indeed, in his opinion, the only time they accummulate flesh is while they are reposing on a fine dry bed after their appetites have been satisfied. He applies tar to the noses of his sheep at least four times during the feeding season. To do this, he makes a little pen with his feeding boxes, into which he gathers a portion of the sheep, and with a wooden ladle applies the tar without catching or handling the sheep. He commences feeding at half-past five in the morning, to which he gives his personal attention. Unless he fears danger to the building from the weight of sheep and accumulated manure, he does not clean out his stables until the sheep are sold. The manure is then so hard and solid that it must be cut with an axe or hay-knife into blocks before it can be handled—thus showing that no decomposition has taken place during the feeding season.

Mr. Winne informed us that some of his friends had censured him for publishing the particulars of his process in fatttening sheep. Having acquired his skill by much careful study and many expensive experiments, they said he was under no obligations to give the public the benefit thereof. If he had made valuable discoveries in this branch of farming he was entitled to the benefit of them, and others should be left to find out the secret of his success as best they might. But he did not so regard the matter. He esteemed it the duty of every man to do some good in this life, to make the world better for his having lived in it; and if his experience in his humble sphere was of any benefit to his brother farmers, he was not only willing but rejoiced in being able to communicate it to them.

FIVE O'CLOCK IN THE MORNING.

The following popular song, as sung with such thrilling effect by Mme Parepa-Rosa, will be new to many of our readers. In its way, there is hardly anything prettier in the language.

The dew lay glittering on the grass,
A mist lay on the brook;
At the earliest beam of the glowing sun,
The swallow her nest forsook;
The snowy bloom of the hawthorn tree
Lay thickly the ground adorning,
The birds were singing on every bush,
At five o'clock in the morning.

And Bessie, the milkmaid, merrily sang,
For the meadows were fresh and fair;
The breeze of the morning kissed her brow,
And played with her nut-brown hair;
But oft she turned and looked around,
As if the silence scorning;
'Twas time for the mower to whet his scythe,
At five o'clock in the morning.

And over the meadows the mowers came,
And merry their voices rang;
And one among them wended his way
To where the milkmaid sang;
And as he lingered by her side,
Despite his comrade's warning,
The old, old story was told again,
At five o'clock in the morning.

For the New England Farmer.

PLANTING FRUIT TREES.

Much has been said relative to the planting and growing of fruit trees, in the FARMER during the past few years. But perhaps a few remarks upon this important subject, though not wholly new, may interest some one of your many readers. It seems a very simple thing to plant a tree, and almost every one thinks he knows how to do it. But seldom is it well done. It is a more important operation than is generally supposed, for all its future health and fruitfulness are directly dependent upon it.

Right planting is the foundation and corner stone of all successful horticulture; it is one of the fundamental principles that produce vigorous trees and an abundance of fruit.

More than one-half of all the fruit trees planted in this country die, or fail to yield fruit, for the simple reason that they are not properly cared for. Fruit culture means more than leaving a tree to take care of itself. It demands care, watchfulness, patience, hard work, strong effort, and above all, intelligence and forethought.

Plant *young* trees, both in your orchards and

gardens. They cost less in actual price, in freight and in planting, than older trees. They are surer to grow, have more and better fibrous roots, and will adapt themselves quicker to the soil and location. With equal watching and care they will grow so vigorously as to excel older trees, in abundance of fruit, size and health. Never choose standard apples, plums or cherries, more than two years old, and dwarf trees one year old.

Be careful in your choice of *soils*. A sandy soil is leachy, contains no moisture, and is liable to drought. A very heavy, clayey soil is directly the opposite, being too wet, tough and adhesive. Few or no fruit trees do well in either. A gravelly soil is hardly more desirable. A deep loamy or alluvial soil may always form a good choice.

When you are ready to plant, plough with a subsoil plough as deep as possible a strip six feet or more wide; then dig holes a foot or eighteen inches deep, and about three feet in diameter. Place the tree at the same depth it formerly stood; then replace the earth, taking care not to bend or break the rootlets of the tree, and always allow abundance of room for the growth of the roots.

Many inexperienced persons lose their trees from too deep setting. No tree should be set lower in the earth than its original position. Where the ground has not been ploughed and subsoiled, the planter must invariably dig his holes two feet deep and four or more wide.

Mix with the earth, before it is returned to the hole and is placed around the roots of the tree, a good compost of ashes, chip manure, leaf mould, muck and lime. Let a large portion of the compost be placed beneath, but not in contact with the root of the tree, and the remainder on the surface of the ground to act as a mulch. The quantity will vary from a half bushel upwards, according to the size of the tree. The effect will be most marked, and the growth astonishing

If any of the roots are mutilated or bruised, pare them off with a sharp knife to prevent decay, cutting back on the under side until you reach sound wood.

Nearly all trees that come from the nurseries have lost some of their roots; consequently their branches should be shortened in the same proportion. At the time of planting, prune all branches back to three or four buds from the base of each branch.

All large trees will require stakes; young trees firmly set, will not. Mulching is almost indispensable. The earth should rise like a small mound toward the trunk of the tree, and over this should be a mulch two inches deep of hay, half decomposed manure, saw dust or tan bark. It not only saves the labor of cultivation, but prevents the moisture of the soil from evaporating, renders the temperature more uniform and prevents injurious effects from frost. The mulch should extend beyond the tips of the roots.

Cultivate the ground carefully. Never allow grain crops, nor root crops of an injurious nature, to grow in the field. Neither allow grass nor weeds. The cultivation and manuring necessary for growing some kind of judicious crop between the rows, as potatoes, beets, or turnips, will always prove a benefit. If no crop is grown, go through frequently with the cultivator or horse hoe and stir the soil two or three inches deep. A thorough stirring of the soil is nearly as good as a coat of manure.

If trees are dried by too long carriage, they may be restored by immersion for a day or two in water or thick mud. Use no water in planting. It tends to bake and harden the surface of the earth, and generally proves injurious. Mulching will supply all the moisture necessary.

Careful pruning is essential. By careful pruning is not meant cutting off large, healthy, vigorous branches; but it does mean the cutting out of all diseased branches or dead wood, and such smaller shoots and branches as appear to prevent the free access of sun and air to all parts of the head of the tree.

If farmers would only cultivate their trees as well as their corn, they would have little occasion to utter complaints against poor orchards or poor fruit. M. S. W.

Mason, N. H., June 5, 1869.

For the New England Farmer.

OUR QUIET VILLAGE.

A standing complaint against our village is that it is too quiet. But to the writer this very characteristic seems an attraction; but let me just here inquire if it is worth while to mix the noise and commotion of a manufacturing village with the comparative quiet of a farming community. No vindication is proposed of that lack of public spirit which characterizes this and that staid old farming town, nor any defense of that disposition to discourage new enterprises, and keep in the old ruts from generation to generation, which is too prevalent in some districts of New England.

But, when we reflect, is it to be wondered at that a community, mainly agricultural, should pursue the even tenor of its way quietly as the succession of seed-time and harvest, and calmly as the procession of the seasons? The farmer, indeed, craves excitement as well as any man, and gets it with interest sometimes in his town or parish meeting. And the winter need not be to him a dull season, if it be one of comparative rest. In fact he can then be the liveliest of mortals, while those heavy burdens which the busy season imposes are happily rolled off. He can also improve the opportunity to make a trip to the metropolis, and contrast its crowded, brilliant thoroughfare with his own humble highway. A day spent amid its sights and sounds will

quicken and enlarge his ideas for the rest of the year, and endear him more closely to his own calm retreat and "silent shade." And then how grateful to his city cousins is the very thought of that "haven of peace" up in the country whither they can flee in the summer, and forget for the time the noise and confusion amid which they live and move.

In fact it is matter for thanksgiving to Him who made the country, that there are such calm retreats for this fast age and generation, where the fevered blood can cool, and the over-taxed brain be soothed to the rest it claims. And our quiet, unpretending villages are every year coming to be more and more favorite places of resort for families from the city, in preference to fashionable watering-places and hotels by the "sounding sea." True, our country life grows dull after a while to the city belle and beau, and the stirring business or professional man who lives in excitement, gets to be uneasy after a while, as a "fish out of water." Well, let them then return to their native element until the next vacation season comes round, while we that remain behind will hold on our quiet way till our summer guests return. The town has its distinctive features, and so has the country, and in attempting to engraft the former on the latter we are trying to join together what God hath put asunder. Is it not so?

Yet, every now and then, the cry is raised, "why don't you have more going on here?" Meanwhile farming operations are steadily going on, day by day, year in and year out. Summer has its work and round of duty, and winter brings its appropriate cares and toils, though the former season is distinctively the busy one. One is peculiarly the time for brain work, the other for manual labor; one for culture of mind and heart, the other for tilling the soil. But all the year round there is enough in the humblest hamlet to keep it from stagnation.

Suppose for a moment that this quiet feature of our village should no longer distinguish it, and it should come to be, so to speak, a cross between town and country: suppose instead of the exclamation "How quiet your street is," every new comer should remark, "How changed from your old quiet!"

So far as this implied an increase of enterprise and public spirit, and more frequent social gatherings, the change would be a manifest improvement. But to substitute for our prevailing calm the noisy bustling activity which some hanker after, would seem like substituting for our sweet Sabbath bell the steam-gong's unearthly yell, that would make the fathers turn in their coffins.

If more noise is wanted, the multiplication of reaping and mowing and threshing and sowing machines will fast meet this want; and as for the rest, it is only necessary to set the gossips and busy-bodies by the ears.

No doubt the writer's view of the subject is biased by his own private taste and temperament, and no man ought to set up his own personal preference as the rule for all. There are in both town and country, "many men of many minds," but let me just repeat the query, whether it is really desirable to obliterate the old familiar feature of a farming village.

It is sad indeed to contemplate the death-like stillness of a deserted village, with its crumbling old business stands and grass-grown highway. And it is aggravating to find anywhere in this great progressive nation a family or community stagnating for want of enterprise. But what flock is not grateful to the Good Shepherd for leading it now and then "beside still waters?" W. E. B.

Longmeadow, Mass., 1869.

WHAT IS RUST ON GRAIN?

In 1867 the farmers in Australia lost so much by the red rust on wheat that the Governor of the Colony appointed a Commission to investigate the subject. From the report of that Comminssion, which we find in the *Southern Cultivator*, we make the following extracts:—

As regards the physiological character of red rust, there can be no doubt whatever that it is essentially a vegetable parasite or fungus, attacking the plant externally, and brought into active operation by certain atmospheric or climatic conditions, the most effective of which last year were heat and humidity. During the growing season, the blades of cereal plants were kept in a continual state of dampness, with occasional rapid evaporation, causing the pores of the leaf to be more than ordinarily open, and thus facilitating the entrance of the infinitely minute spores, or seeds, of the rust fungus, which are more or less always floating in the atmosphere, or deposited on the soil or surrounding objects, ready for dissemination by every wind that blows.

The spores of the rust are proved to be true seeds, possessing a uniform and definite character according to their variety, retaining their vitality as other seeds do, and capable of being developed at any time by the application of heat and moisture. Your commissioners have examined through the microscope various specimens of last year's rusted wheat, and find the rust spores identical in appearance with those noticed and delineated by Mr. Cooke, and other eminent mycologists, who have written on the subject. It is found as the almost uniform result of last year's operations, that rust has prevailed upon all kinds of land —upon lands long cropped, upon fallow lands, upon grazed lands, upon virgin soil, upon manured lands, upon the plains, and upon the hills. But more than this, it has been proved that in nearly every instance the richest lands have suffered the most from red rust, and that,

in a large number of cases. the best crops have been from the poorest natural soils, and from those most exhausted by frequent cropping. It is an almost universal fact that wherever the wheat grew most luxuriantly there the failure has been complete; whilst those crops that in the early part of the season were the least promising, as a rule, turned out by far the best sample and the heaviest yield. This very remarkable circumstance, attested by hundreds of witnesses, is thus accounted for: Luxuriance in vegetation, like excessive fat in animals, is not identical with vigor. Plants forced into abnormal luxuriance are more susceptible of climatic changes than those which are tough and hardy. The more juicy and succulent the plant, the more predisposed is it to the inroads of the rust. The pores of the leaf being unusally open, the minute spores of parasitical fungi can more readily enter. Then again, the more dense and heavy the crop, the less possible is it for the wind to circulate, and the saturated leaves to dry. On the other hand, in a thin, light crop, the leaf pores being less open to the entrance of the rust seed, the disease is not so freely propagated, whilst the whole crop is far better situated to enjoy the drying influences of the wind, which retard the development of the parasite. The poor crop has thus the advantage over the thick and luxuriant crop in a season favorable for the development of rust. Hence, so far as red rust is concerned, rich soils, and what is termed "high farming" instead of shutting out the disease or mitigating its severity, operate in the contrary direction, always supposing that the climatic conditions favorable to the development of rust are present.

The *modus operandi* of the disease is twofold. The rust spores, obtaining entrance through the open stomata. or breathing pores of the plant, are very quickly developed, and, pushing forward rootlets (*mycelia,*) gradually work their way along the sap vessels of the leaf—in all probability injuring, by their multiplication and progress, its internal mechanical structure. But the chief damage—or, at all events, that which can with most certainty be traced—is caused by the absorption of the wheat sap by the parasite that has entered its channels. The juices that should have gone to nourish the wheat ear are intercepted in their progress by the rust fungus, which starves the grain by living on its proper nourishment. This is not only deduced from microscopic observations, but is clearly demonstrated by chemical analysis. Healthy grains of wheat contain certain definite proportions of inorganic ash—the ash, in its turn, containing definite proportions of phosphoric acid, potash and soda, and magnesia. It has been demonstrated that rusted wheat is very deficient in that ash, having sometimes less than one-third its proper quantity. On the other hand, the rust spores, gathered from the rusty wheat, yield, on analysis, an extraordinary quantity of ash, which is found to contain a large amount of the constituents present in the ash of healthy wheat, but wanting in the ash of rusty wheat. The commissioners say that crops from seed brought from a distance were affected with rust equally with that grown in the same sections; and that the use of good plump seed is no protection from the disease, but that in many cases shrivelled and inferior seeds have yielded healthier and heavier crops than those raised from first class seed. Still they recommend that the seed be pickled, for the purpose not only of killing the spores of black rust or smut, but also to destroy spores of the red rust which may happen to attach to it.

CHEESE MAKING IN A SMALL WAY

Sometimes the farmer who keeps only a few cows to supply his family with milk and butter, would like also to make a few cheeses for family use. He does not care to make cheese to sell and therefore hardly feels able to purchase cheese apparatus and fit up a dairy house after the most approved models.

Let us see how cheaply we can arrange for a primitive dairy. If nothing better is at hand a common washtub, clean and sweet, will answer the purpose for setting the milk and working the curds.

A hoop must be had from the cooper. Let it be ten inches in diameter top and bottom by twelve inches high and fitted with a follower. A very good press may be made in a few hours from a twelve foot plank and some pieces of scantling. About a foot from each end of the plank set up two short pieces of scantling four and one-half inches apart. Fasten them firmly to the plank with bolts or pins. The lever may be a joist four by four, or four by six, and fourteen feet long. One end is to be secured by a pin passing through the uprights at one end of the plank and it is to move freely up and down between the uprights at the other end. A weight hung at the end of the lever and you have a press that will do good service.

The hoop is placed near the stationary end of the press-beam and blocks put upon the follower and the press-beam let down upon them, and in this way the cheese is pressed.

A long, thin, wooden knife will do for cutting the curds. Now a gallon of good milk (wine measure) will make nearly a pound of cheese.

Your milk having been placed in the tub and the number of gallons known, a portion may be taken out and heated in pans over a common stove. The pan holding the milk should be set in another pan holding water, or over a kettle with water in it, so as not scorch or burn the milk in the pan. Heat the milk and pour into the tub until the mass indicates a temperature by the thermometer of 85°. Then add a quantity of rennet (which has

been previously prepared by steeping the dry skins or rennet in water,) sufficient to coagulate the milk say in forty to fifty minutes. Now put your finger into the curd, raise it slowly and if it readily splits apart, the mass is ready to cut into blocks with the curd knife. After cutting into checks two inches square, let it remain at rest ten to fifteen minutes for the whey to form. Then carefully break with the hands by lifting up the curds very gently, and when the mass has been gone over let it rest for ten minutes for the curd to subside. Now dip off a portion of the whey into the pans and heat on the stove in the same manner that the milk was warmed. In the meantime continue breaking the curd by gently lifting until the particles of curd are about the size of small chestnuts or large beans. Then pour in the warm whey and continue heating and adding the warm whey until the mass indicates a temperature of 98°.

Do not be in a hurry, but take things leisurely, continuing the breaking or stirring the curds while heat is being applied. It may now be left at rest for half an hour and then stirred so the particles will not adhere, and this treatment continued until the curd has a firm consistency. Take up a handful and press it together in the hand and if on opening the hand it readily falls to pieces it is about ready for draining. Throw a cloth strainer over the tub and dip off the whey down to the curd. Then put the strainer on a willow clothes-basket and dip the curd into it to drain. It may now be broken up with the hands and when pretty dry returned to the tub for salting. Salt at the rate of four and one-half ounces of salt to ten pounds curd; mix it thoroughly and put to press. After remaining from two to four hours in press, turn and put to press again leaving it under pressure until next morning when it may be removed to the shelf. Small cheeses need not be bandaged; they should be rubbed over with a little fresh butter melted and applied warm, or with oil made from the cream that rises from the whey.—*X. A. Willard, in Western Rural.*

GEOFFREY PIT.

Sir Samuel W. Baker in his Wanderings in Ceylon, gives an account of coffee culture in that island, in which he says:

"Much attention is also required in the management of the cattle on an estate, for without a proper system, the amount of manure produced will be proportionately small. They should be bedded every night, hock deep, with fresh litter, and the manure thus formed should be allowed to remain in the shed until it is between two and three feet deep. It should then be heated on a Geoffrey Pit. This is the simplest and most perfect method of working up the weeds from an estate, and effectually destroying their seeds, at the same time they are converted into manure. A water tight platform is formed of stucco—say forty feet square—surrounded by a wall two feet high, so as to form a tank. Below this is a sunken cistern,—say eight feet square—into which the drainage would be conducted from the upper platform. In this cistern a force pump is fitted, and the cistern is half filled with a solution of saltpetre and sal ammoniac. A layer of weeds and rubbish is now laid upon the platform for a depth of three feet, surmounted by a layer of good dung from the cattle sheds of one foot thick. These layers are continued alternately in the proportion of three to one of weeds, until the mass is piled to a height of twenty feet, the last layer being good dung. Upon this mass the contents of the cistern are pumped and evenly distributed by means of a spreader.

This mixture promotes the most rapid decomposition of vegetable matter, and combining with the juices of the weeds and the salts of the dung, it drains evenly through the whole mass forming the most perfect compost. The surplus moisture, on reaching the bottom of the heap, drains from the slightly inclined platform into the receiving cistern, and is again pumped over the mass. This is the cheapest and best way of making manure upon an estate, the cattle sheds and pits being arranged in the different localities most suitable for reducing the labor of transport."

In the Southern States where manure is the great want for the cotton field, cannot some method similar to the above be devised to meet the necessities of the case.

HIRED LABOR ON THE FARM.—I have thought that many people are not aware of what it costs to pay a man for a year's labor. It is not merely the amount of money you give him, but the cost of the team and the necessary implements he must have to labor with, and the rent of the land that he tills. It is true the team and implements would be left, provided no accident befell them, but so would the money that they cost, and the interest remain if it had not been expended.

The following statement, will show the cost of a laborer in this vicinity, for one month.

Wages of one hand,	$25 00
Board of same,	10.00
Board of horses,	10.00
Interest on price of horses	2 50
Interest on price of implements,	2 50
Rent of land (1-12 of 40 acres),	16.66
Total expense per month,	$66 66
Expense for one year,	$799 92

Now, this statement does not include repairs from accidents, such as letting the team run away and breaking the wagon, or utensils of any kind. Again, some would cultivate more than forty acres, but it is designed to make an average of hands.—*Illinois Cor. Western Rural.*

SALTING HAY FOR STOCK.

MAN, in taking *his* food, can elect for himself, as may best suit his taste, in regard to salt, or any other condiment he may use. But it is not so with our farm stock. They can not send for salt, pepper or vinegar at will, but are dependent upon us to study and ascertain their wants and tastes, and then judiciously to supply them.

Our domestic animals have a keen sense of taste and smell. The pure soil is undoubtedly grateful to them. They sometimes eat it with avidity, and especially in the spring, after being shut out from it through the winter. Horses will sometimes eat half a pint, apparently with great relish, and we have no doubt with benefit to themselves. When grazing, they probably realize pleasure in the smell of the soil, as well as in the taste of the fresh grass.

All animals require salt in some form, even our poultry, which it will readily deprive of life if taken in an undissolved form. Mingled and dissolved in a mash of boiled potatoes and meal, it is highly beneficial to them.

How much salt each ox, cow and horse requires in a given time, cannot be definitely settled, because their wants are not just alike, scarcely in any respect. If half a dozen cows consume a certain quantity of salt in eight weeks in the summer, it would be a fair inference, we think, that one-fourth that quantity would be all that they would voluntarily eat in cold weather. Some excellent remarks on this subject we find in an old number of the *Country Gentleman*, as follows:—

If salt is applied in too large quantities the animals fed upon it will certainly lose in condition. When an animal is forced by long abstinence, or by its food being too highly salted, to partake of salt in quantities beyond what the natural instinct of the animal would dictate, then it becomes poisonous or injurious, and deteriorates the health and condition of an animal by undue secretions from the liver, bowels, &c. These excessive secretions rob the animal of a portion of its food, and carry off what otherwise would be converted into fat, or flesh, or milk, &c.

It thus becomes a matter of considerable *practical* importance to determine what is the quantity of salt which an animal would naturally and instinctively crave during the consumption of a ton of hay. Some have recommended as much as eight quarts of salt to each ton of hay; and very few have ever recommended any less a quantity than four quarts. Now it is our firm persuasion, from observations made by ourselves and others, that in the cold months no creature would crave or voluntarily eat as much as even two quarts of salt during the time of its consuming a ton of hay. If so, this quantity and all beyond it, would only be injurious to cattle or stock of any kind, when forced upon them with their food.

This is one of the errors or dangers which it would be well to guard against. The other consists in the practice of getting in hay in a damp or partially cured state, under the supposition or expectation that a free application of salt will preserve it from heating, moulding, or otherwise spoiling. A quantity of salt which would be effectual for this purpose would make the hay injurious, or absolutely poisonous from excess of saline matter.

Several years ago the practice of salting hay was all but universal. It was recommended, not alone because it was supposed that the hay was better cured by its use, but because it enabled the farmer, as he supposed, to house hay imperfectly cured, or that which had got wet in the open air. This was carried so far, in some instances, that from eight to sixteen quarts of salt would be scattered over a single ton of hay. This practice afforded a constant temptation to get in hay in a slovenly and imperfect manner, and must have resulted injuriously in the second place by depreciating the health and value of the stock that was obliged to feed upon it.

We refer to the subject, at present, because in a "catching" hay season there are strong inducements to resort to this injurious practice, unless some special thought is given to the subject.

In judicious hands, a little salt, a quart or two to the ton, occasionally, may do no harm, but, possibly prove beneficial. The true way, however, is to cure the hay independently of salt, and administer the condiment by itself when it is needed.

If a continued diet of *salt junk* brings the scurvy upon the poor sailor, we cannot well see why a similar diet will not bring some dire disease upon stock that is compelled to feed upon it. The practice is a dangerous one, and ought to be resorted to with great care.

THE ENGLISH AGRICULTURAL COLLEGE.—Dr. Gregory, the President of the Illinois Agricultural College, is in Europe examining the institutions there for agricultural education. His first letter, published in the *Western Rural*, is devoted mainly to the only agricultural college in England, that at Cirencester, which is a private institution. After alluding to an almost hopeless debt for extravagant buildings, which hangs like an incubus upon the enterprise and interferes materially with its success, by necessitating charges which virtually excludes all but the sons of rich men, he remarks:

But after careful inspection, the institution does not seem to me the equal, either in work or results of the Michigan Agricultural College, and I believe that in less than two years the Illinois Industrial University will be greatly its superior in most points as it is already in many. Agricultural education has its finest field and its best material in the great basin of the Mississippi, and it must win its great victories there. Cirencester afforded me many capital hints, but little to copy.

BUDDING YOUNG TREES.

Will you or some of your correspondents please inform me through your valuable paper the time and mode of budding young trees, and oblige

A FARMER'S SON.

Kingston, N. H., Apr. 30, 1869.

REMARKS.—We have delayed an answer to the above inquiry for the purpose of bringing the subject up more timely than it would have been in April or May. From the first to the twenty-fifth of August is the budding season in New England. Mr. Cole, a former editor of the FARMER, gives the following general rule as to the most favorable time for this operation: Apples, from August 15 to 25; quince, same as apples; cherries, Aug. 5 to 15; pears, Aug. 10 to 20; peaches, September 5 to 18; plums and apricots on plums, August 1 to 10. But much depends on the forwardness or backwardness of the season, on the growth of the tree as affected by wet or dry weather, and on locality. Consequently judgment must be exercised.

Mr. Thomas says, the essential requisites to success in budding are, *First*, a thrifty, rapidly growing stock, so that the bark will peel very freely. *Secondly*, a proper time; not so early that there will be too much cambium or mucilaginous cement between the bark and the wood for the adhesion of the bud; nor so late that the bark will not peel, nor the subsequent growth sufficiently cement the bud to the stock. *Thirdly*, buds sufficiently mature. *Fourthly*, a keen, flat knife for shaving off the bud, that it may lie close in contact upon the wood of the stock. *Fifthly*, the application of a ligature with moderate pressure, causing the bud to fit the stock closely.

The newly-set bud is united to the stock by the thick sap, or *cambium*, or mucilage between the bark and the old wood, but it should not grow until the next year; hence the importance of this substance being in the right state when the bud is inserted, and of its being put in at the right season. The stock should be growing well when the operation is performed, and it should continue to thrive ten or fifteen days afterwards. When we hit on the right time almost every bud will grow; but if too early, the buds may start the same season, and then the winter will kill them, or, in case of stone fruit, gum is liable to ooze out and start off the bud; and if done too late, the bark will not peel well, and there will not be sufficient growing weather to cause a union of the bud and stalk.

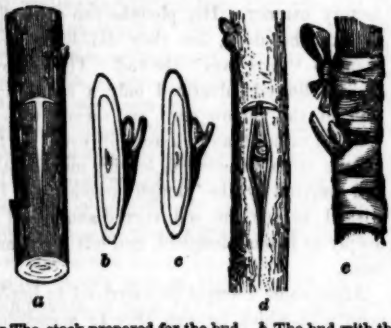
Now for the buds. These are obtained from shoots of the present year's growth. It is important that these buds, which may be called the seed or germ of the tree you wish to propagate, are well grown, or ripe. Cut thrifty, strong shoots, selecting those on which the terminal bud is well developed,—those from old trees of moderate growth are more firm than those of more rapid growth. As soon as the scion is cut trim off the leaves, leaving about one-third of an inch of the stem of the leaves on the scion, as is seen in the cut. Leaves exhale moisture very rapidly. It has been found that a sunflower plant only three feet high exhaled from its leaves in a dry day between one and two pints of water. Cut a a limb from a tree and throw it upon the ground with its leaves all on and it will quickly shrivel; but cut off the leaves and it will remain plump and fresh much longer. After cutting off the leaves, however, the scion should be wrapped in a damp cloth, or mat, or grass, or moss, or sawdust. And if not used at once, should be laid in a cool cellar or buried a foot deep in moist earth.

Stick of Buds.

Mr. Cole gives the following directions for performing the operation of budding, in his Fruit Book: "With a sharp budding knife, make a perpendicular slit, just through the

bark, about an inch long, then a cross-cut, in the form of a letter T. It is well to make the cross-cut in a circular form, as in the figures *a*, *d*, that the band may cross the cut. With the ivory at the end of the knife-handle, raise the bark a little at each corner, below the cross-cut. If one has not a budding-knife, this may be done with a piece of sharpened hard wood or with the knife-blade. Lift up the bark, not force the instrument between the bark and wood, and disturb the *cambium* or new layer of soft matter.

Hold the but of the scion from you, and insert the knife about one-half an inch below the bud that is next the but-end, and with a gentle curve cut about to the depth of one-quarter the diameter of the scion—more in small, soft, or rather green scions, and less in large scions of firm or ripened wood—and bring out the knife about one-half an inch above the bud. Then put the bud under the bark, and slide it down the vertical slit till the bud is a little below the cross-cut; then, if any of the bark remain above the cross-cut; cut it off there, making a neat fit.



a The stock prepared for the bud. *b* The bud with the wood taken out. *c* The bud with the wood in *d* The stock with the bud inserted. *e* The stock with the bud tied in.

Wind the matting closely around the stock, so as to cover all the vertical and transverse cut, barely leaving the bud uncovered; tie with one bow-knot on the same side as the bud. Bud on any side excepting the south, where the sun may injure the bud in warm days in winter.

We think that the new beginner will do best not to attempt to remove the wood from the bud after cutting it from the scion, as there is danger of injuring the bud in doing so.

For bands, cotton wicking, woolen yarn, strips of cotton or woolen cloth are often used where but few stalks are budded. The soft bark of elm and other trees answers a good purpose. Many procure mats, such as are used in the city for packing furniture, wet and cut it into suitable lengths.

In ten or twenty days after budding, according to the vigor of the stock, the bud will have united with the stock, and if the band binds closely, so as to cut into the bark, it must be loosened and re-tied as before. If the bud has dried and shrivelled, the stock may be re-budded, if the bark peels. In about three weeks after budding, if the bud is well united to the stock, the band may be removed. But if it does not bind, it may remain. If it remains on during winter, the ice is more likely to gather around the band, and injure the bud. As the bark of the cherry curls, the band needs to remain on longer than on other stocks.

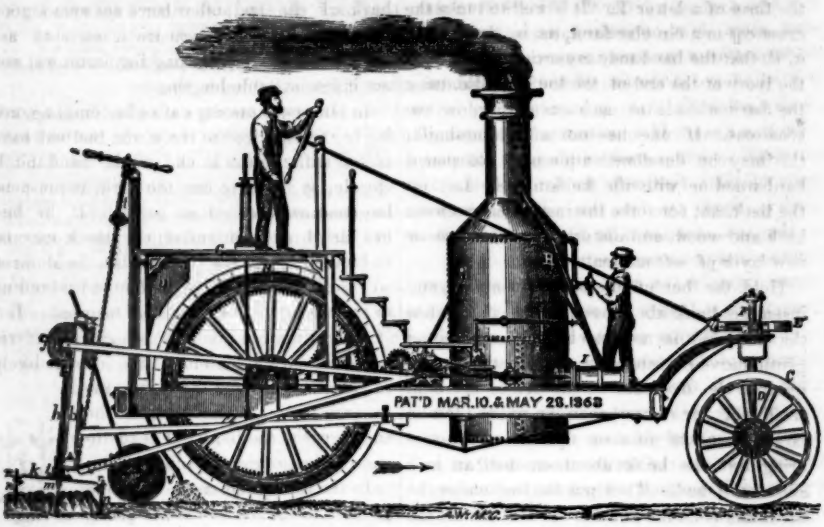
Growing Bud.

In the spring, from the bursting of buds to the leaves becoming half size, cut off the stock in which the bud is good, to within two or three inches of the bud, and when the bud has started, tie it to the stump, if it inclines off. Keep down the sprouts; and in July, cut off the stump even with the bud, as at the line *a*, and keep down both sprouts and suckers.

Manuring an Orchard.—I take a time in the fall, after the fruit has been gathered, or in early spring, when other work is not pressing, and strew some kind of grain in the grass beneath the trees; then, with team, draw a load of woods-mold to each tree, and turn in the hogs, or if I have none, allow my neighbors to turn theirs in and get the grain. The result is, the mold is thoroughly worked into the soil by the rooting of the swine.

Only a few need be dressed in this way each season; take one row, for instance, this year, and another the next. One day's work every year, given to the cultivation of an apple orchard of one hundred trees, in this way, will keep it in vigorous growth, and, of course very productive.—*Cor. Ohio Farmer.*

—In making or selecting a fork handle, have the heaviest part about one-third the distance from the tines to the end, as this is the point where the greatest strength is needed. Hoe handles should be just a trifle the largest a little above the center or at the point where the right hand comes. Second growth white ash is the best material for fork, rake and hoe handles.



CALIFORNIA STEAM PLOUGH, OR CULTIVATOR.

In the FARMER of July 3, we gave a brief notice of this implement, condensed from an account of it in a Calfornia paper. The inventor, Mr. P. H. Standish, who is now at the East negotiating for its manufacture on a large scale, called on us the other day and exhibited a model of part of the machinery, with drawings of the whole. He also gave us a history of its invention and of its operation in actual field work.

Perhaps it may be proper to remark that this "steam plough" is no plough at all, but a new contrivance for working the soil, operated by steam. The essential feature of this invention is not in the application of steam to ploughing, but in a novel device for stirring the soil. The principle of the invention was first tested by horse power, but as that was not sufficiently steady or forcible, steam was adopted.

The idea was at first suggested to the mind of Mr. Standish in the cultivation of a *rancho* or farm in California. From his observation of the imperfect manner in which the soil was pulverized by the ploughs and harrows in use on his farm, Mr. S. was lead to inquire whether something could not be devised which would prepare the seed bed in a more satisfactory manner. His ploughs ran about five or six inches deep, but they did little more than to "turn over" the soil. The harrows which followed pulverized only a small portion of the furrow slice, and seemed to consolidate rather than to loosen it, even as far as the teeth penetrated, leaving much of the soil inverted by the plough untouched. He wished to see the soil stirred and mixed as deeply as it was ploughed, and left light and loose.

After some thought he contrived an implement with which he was able to accomplish his purpose by horse power, but at the expense of too much time and labor for practical use. But, by way of experiment, he operated on small patches of a wheat field, previously ploughed and harrowed in the usual manner, selecting different kinds of soil, from sandy ridges to heavy bottoms. In all cases where the soil was thus thoroughly worked, the growth of straw and yield of grain was decidedly superior to other parts of the same field. Encouraged by the results of these experiments Mr. Standish embodied his idea in a steam machine of which the above illustration, which he kindly permitted us to copy, gives a side view. This machine which was built in

California, cuts a "furrow" or swath twelve feet wide, and has ploughed at least one thousand acres there, including land "baked to the brick-like consistency which is characteristic of most California soils in the height of the dry season."

On this twelve-foot machine, four sets of horizontal cutters, each working a circular space of three feet, are used,—only one of which is shown in the cut. These operate on the soil something as the knives in the Daniel's planer do on a board. And from the manner in which the cutting knives are forced through the soil, they do not drag or retard the forward motion of the machine; but, like the wings of the propeller of a boat, they rather crowd forward, and thereby prevent the tendency of the locomotive to settle down in soft soil, as it would do in drawing ploughs. Another obstacle to success in drawing gang ploughs by locomotive power is in the difficulty of starting both the machinery and the ploughs at once. In the California machine, the cutters can be put into operation before starting the machine forward at all, and then this forward motion can be graduated at pleasure, while the cutters are in full play, so that their forward stroke at each revolution may be half an inch or six inches, according to the state of soil or other circumstances.

From his experience with this twelve-foot machine, the inventor believes that those cutting from six to eight feet will be more convenient and more generally satisfactory. He estimates the cost of a six foot machine, capable of ploughing from one to two acres an hour, at $2500, and an eight-foot machine, with a ploughing capacity of one and a half to two acres an hour at $3500. A seed drill may be attached to the machine, or it may be used for operating a threshing machine, a grain mill, or for other purposes for which a stationary engine can be used.

The following description of the parts of the machine are copied from the California *Mining and Scientific Press*, of Feb. 27, 1869:—

A very strong frame of wood supports the machinery and is mounted upon two broad wheels, B, B. The front of the machine is supported by two guiding wheels, C, C, turning on an axle, which passes through a vertical standard, D, with a device at the point of its support on the axle, by which the wheels, C, C, are allowed to accommodate themselves to any irregularities of the surface. A gear wheel, E, is keyed to the top of the standard, D, and is turned to the right or left by a screw, F, working in its teeth, and operated from the platform, G, by a long rod and a wheel or crank attached. The engines, I, I, and boiler are supported upon the frame and suitably stayed, so as to be firm. An upright tubular boiler is preferred, in order to accommodate the machine to declivities, without danger by a change in the water level, as would be the case in a horizontal boiler, and also to economize room. A pair of horizontal engines, as shown, will give the requisite power, and will be much more steady in their action than would be possible if they were vertical. The ploughs or cutters are driven by the beveled wheel, U, on the sharp, K, also thrown in and out of gear by a clutch, as shown, and which, by engaging the wheel, V, turns the shaft, W, and through this the bevelled gear, X, at the other end, by which means the ploughs or cutters may be revolved. The cutters are mounted upon a supplementary frame, b, b, which has the arms extending forward to a point at the sides of the frame, where they are pivoted so as to be movable about an axis in a line with the engine shaft. The driving gear, x, is keyed to a horizontal shaft, and by means of the bevelled gears, g, g, drives the vertical shafts, h, h, which operates the cutters or ploughs. A disk, i, is keyed to the bottom of the cutter shaft or spindle, h, and has the arms, k, k, projecting from it, radiating from the centre. These arms are bent at right angles at the outer ends so as to form supports for the axes of the hubs, m, to which the cutters are attached. The cutters, n, n, pass vertically through the hubs, and when not fastened, can turn with them about their axes. For use in soil that contains but few stones, the cutters are retained in position by light supporters; r, r, which may be made of cast iron. The supporters are bolted to the arms, k, k, and each have a slot made in the projecting end which clasps the head of the cutter, and holds it rigidly in place under the ordinary strain of ploughing; but if the cutters strike a stone or other obstruction, one of the projecting lugs or sides will be broken off; so that the hub can revolve, the cutter being swept backwards until the obstruction is cleared, when a new supporter can be attached. As these castings cost but a few cents, and are easily replaced, they will serve as an efficient protection to the cutters. But if the soil be very stony or full of obstructions, the cutters may be kept in position by a stiff spring, which is attached to the arm, k, and curved around so as to clasp the cutter below the hub. This spring is sufficiently stiff to withstand the ordinary strain of ploughing, but will yield to any great obstruction, so as to allow the cutters to pass over it. The cutters may be either straight or curved, as may be the most efficient. They are elevated or depressed by various devices, one of which is shown at t, being a screw operated by a wheel from the platform, G. Any approved seed sower may be attached to the apparatus as shown at u, having distributing pipes, V, so that that the grain may be sown, and then ploughed and harrowed in. A roller, or a series of broad wheels, J, are attached to the frame, b, so as to run on the ground just in front of the cutters, thus regulating the depth of the cut, and preventing them from being thrown out by inequalities in the surface.

—Gen. Karney, of Keokuk, has the largest vineyard in Iowa. In two different enclosures, within two and a half miles of Keokuk, he has seventy-one acres set in grape vines with fine oak posts and wire to train them on. He has expended in all some $35,000 on his vineyard, and in enclosing the grounds, building tenant-houses, &c.

For the New England Farmer.

RHODE ISLAND FARMING.

The latter part of June is a favorable time to view any country to gain an opinion of its fertility and of the skill of its farmers.

It was my good fortune to pass through this Island, June 23, and I venture to make a few notes.

There are as excellent land and as intelligent farmers here as can be found in New England; and there are also unproductive acres and bungling management in some cases. The fields were showing a fair burden of grass and the clover was beginning to bend upon its succulent stalk; the pastures gave abundance of feed; the pears and peaches had begun to assume their comely shapes; but apples have blasted and dropped off from the thrifty old trees that should produce abundantly, and in some places the canker worm and caterpillar had stripped the branches of their verdure, leaving almost a wintry nakedness.

There was one other blur in the beauty of the vegetation, that spreads from shore to shore over this beautiful undulating Island, and that was, the ox-eye daisy, that in many fields almost obscured the emerald tints by the abundance of its glaring white blossoms. It may be a comely flower to the eye of the botanist, but to a farmer who sees beauty in utility, it is sad to see so worthles a sweed maturing its seeds in such unlimited abundance. I am told that it was not known here until within ten years, and now but few farms are free from it. As we look across the water to the main land, the sloping fields in Tiverton and Little Comptom are filled with it. How can it be subdued?

I called at the Ogden farm, and saw something of the system of soiling practiced there. Twelve cows, three bulls, two mares and colts and some calves were at the barn, and the noon-day meal of clover and timothy was being eaten with the greatest apparent relish. The Jersey cows have improved in condition since February. The drained land is sown with grain that looks favorable for a large yield of fodder for soiling or a good crop at harvesting; and present indications are that the land will now yield a constant profit if dressed with the manures that constantly accumulate, and that Col. Waring has made a good investment, if this draining cost no more than one hundred dollars per acre.

Along the east shore the inhabitants believe they have the best land on the island, but the farmers in other sections are equally prejudiced in favor of their own localities.

There are gems of farms in all parts of the Island, but on the east side the seventy-five acre farm of Wm. M. Rogers, is not excelled in thorough culture and productiveness. Some of the management may have been more as a relaxation from business than a profitable investment, yet the results have been generally satisfactory. A field of twelve acres of grass has yielded three tons of hay per acre; and nine acres of oats have averaged eighty-three bushels per acre. On this pleasant June day there can be seen sixty sheep and lambs of the South Down and Cotswold breeds in a pasture of only nine acres, and at the same time such an abundance of orchard grass, a foot high, that one might infer that the grass is unpalatable, or that there is too little stock. Another nine acres keep eight cows, and show the same surplus of feed. The other side the wall from the cow pasture is a beautiful field of eight acres in corn, very even and thrifty, and probably the best piece on the Island, of its size. Several different kinds of fertilizers were used, each of which shows a good effect. Three acres of early potatoes, Sebec and Goodrich, will be sent to market in July. Several acres of Surprise oats, from excellent seed, procured from Geo. A. Deitz, Chambersburg, Pa., now two feet high, give promise of a large crop. Other lots are maturing heavy growths of grass for hay. The result is, that more farming is done here on seventy-five acres than on two hundred acres in some parts of the country.

Among purchased fertilizers, ashes are regarded with the most favor by Mr. Rogers. He finds that a dressing upon newly seeded grass land insures a good growth. He has this summer bought 1000 bushels of leached ashes at thirty cents per bushel, from Maine.

The crowning glory of this beautiful home is in the arrangement, the abundance and the thriftiness of shade trees, hedges, flowers, well trimmed turf and gravelled walks, on the two acres of ground immediately about the house. In the twelve years since Mr. Rogers commenced these rural embellishments, the trees have made a vigorous growth, and are now from twenty to thirty feet high, making a screen against the wind, and a home for innumerable birds that fill the air with their music. Here there is such a commingling of flowering shrubs, shade and fruit trees, that the beauty of art and cultivation combines with the seclusion of the natural grove. As we look from the east windows the view is quite extensive. Fields descend the gentle slope to the shore of the arm of the bay that divides the Island from the main land. This bay is of such width here as to give a good water view in connection with the ascending swell of land on the opposite side.

I have mentioned the number of cows, but would add that two of them are Jersey, and others are grades of the same blood. I saw the churning of butter from one week's milk of the half blood cow *Cherry*. It weighed eight pounds thirteen and one-half ounces. The full blood cow, *Maggie*, made twelve pounds of butter in a week last October, but has not been tested this spring. *Topsy*, three-fourths Jersey, made four pounds nine ounces butter in four days at one trial, and is now

believed to yield ten pounds per week. *Dolly* a two-year old heifer, now in milk, bids fair to surpass the others as a dairy cow, as her milk is yellow and rich in cream. Another cow, *Lily*, is from one of R. L. Maitland's imported cows.

I speak of the yield of these various cows with much pleasure, believing the statements to be very accurate, as the trials were made to satisfy the owner as to the real value of the cows, and not to assist in the sale of young Jersey stock at high prices.

Mr. Rogers has raised some very fine young cows, and he has two yearling heifers, one full blood one half blood, that are large for their age, and the indications are that the Jerseys raised with the best of care here, are much larger than the imported animals and better every way. I saw a heifer calf, half Jersey half Guernsey, in the yard of Burton Lawton, seven weeks old, very large, beautiful style, with a remarkable udder for a calf.

In the pasture of Thomas R. Hazard, I saw some polled cows which were fine animals.

Mr. Walker, a market gardener, has those thousands of cabbage plants that he wintered in cold frames, now rapidly approaching maturity,—a large field of thrifty plants, covering the ground well.

Haying has not yet commenced on the Island.

Among so many model farms and beautiful residences there must be many things worthy of notice and study, as wealth is here combined with natural beauty. Z E. JAMESON.

Irasburg, Vt., June 27, 1869.

For the New England Farmer.

MANAGEMENT AND APPLICATION OF BARN MANURE.

Importance of Manure—Farming on the Hudson River—Impoverished Soils—Buying City Manure—Manure from Fattening Sheep—Bedding for the Sheep—Manure under Cover—Form of Yards—Liquid Manure Cistern—Watering to avoid Fire-fang—Application of Manure—Gang Plough for Covering—Old Method of Applying—Effects and Profit of Manure—Increased product of a hundred-acre Farm.

MESSRS. EDITORS:—I certainly owe my friend at your office who so kindly entertained me when there last spring, an apology for not fulfilling sooner my promise to furnish an article for your columns; still as I have been very busy, and as I was not limited as to time, I hope that the present communication will be acceptable. As I understand it, the proposed subject was *Barnyard Manure.*

To begin, I will say that if any one branch of farming, more than another, has had my solicitude, it has been how shall I make more and better manure, and how shall I apply it to the best advantage? I recollect the first speech I ever heard at an Agricultural Fair, and what was said on this subject. The speaker told us there were three things requisite in good farming. He said the first thing was manure; the second was manure; and the third was manure. Although it caused a great laugh amongst his audience, I can assure you it made an impression on me which I have never forgotten.

I will say then, in the first place, that the staple crop of our section of country bordering on the North or Hudson River is hay, and as prices generally have been remunerative, it has been the practice with our farmers to sell not only all the hay they possibly could, but also all the straw, as straw sometimes—as this year—brings as much or more than hay, and keep but very little stock. I, too, started on the same track, but soon found that my land, although naturally poor then, was becoming poorer still, under such treatment, so I at once resolved to try in some way to improve it.

I commenced buying manure in the city of Albany, which is eight miles from my farm, hauling it home in winter and mixing it with muck from the swamp. I let it lay in piles through the summer, occasionally shovelling it over, and then applied it in the fall to the land for winter grain. As this was attended with considerable labor and expense, I concluded to buy and feed some sheep in winter. I found in the spring that I had a nice pile of manure, and concluded at once to follow it out on that line. Since that time I have not missed a year that I have not fed from two to nine hundred sheep. Although I have found more than one year, when cost of sheep, feed, and expenses were figured up, that I had only the manure pile left as profits, still I concluded that even that was better than to sell about all my hay and straw, and have nothing to return to the land save a little heap of manure from the horse stable door, and another from the cow stable, and then sit down and complain—as I have often heard people do—of having bad luck in not getting good crops.

I will now proceed to tell you how I make my manure, and a good pile of it too, as I am satisfied I had five hundred loads this year. In the first place, before harvest, if possible, we haul from the saw-mill sawdust enough to cover all the floors above, and the sheds below, about four inches thick. That is left to dry until after the leaves drop in the fall. Then the sawdust is covered with a coating of leaves about three inches thick. The outside yards also get a bed of leaves. When winter sets in the sheep are put upon this bedding, which lasts from two or three weeks, by stirring it a few times, when bedding of straw or hay must be added twice a week, all winter.

In the spring, or as soon as the sheep are sold, we first remove all the manure from the floors, and generally use that for corn or potatoes. Then we pile the balance, or as much of it as we conveniently can, under the sheds, and the remainder is piled outside. I prefer always to have all the manure under cover, as

I can always see a difference in the crops in favor of the manure that has been thus cared for. I will say, however, that manure kept under cover, must be wet frequently to ensure decomposition. For this purpose, as well as for saving the liquids from the manure, I have my outside yard, so arranged that the drainage from them all settles to one point, and there I have a liquid manure cistern, which receives it, and from which it can be taken when needed to apply to the manures under cover to decompose and enrich them. It must be distinctly understood that these under-cover piles can, under no circumstances, be neglected, as they would surely become dry and fire-fanged, as we call it; by which at least one-half of their value is lost. With these directions promptly carried out, no repiling is necessary, and the manure will be found by the first of September in a first rate condition for the land. Outside piles will generally decompose by the rain that falls upon them; still sometimes, when not much rain falls, they must be wet or handled over to keep them in good shape.

Next comes the application of the manure. And here I will say that in all my experiments, I find that two loads applied on or near the surface, after ploughing and harrowing or cultivating or gang ploughing,—which last is my mode,—is worth and will give as much benefit as at least three loads ploughed under, especially if it is an old sod. When I have a clover sod and very coarse manure, I do sometimes, for corn or potatoes, plough it under, but not very deep. Then by ploughing a little deeper the next spring it brings the manure just in the place where it is needed for the wheat, barley or oat crop.

I am surprised when I see, as I do in going over the country, and as I did in my visit to Boston, last spring, how many of our farmers are holding on to the old mode of applying manure by dumping it from carts or wagons on the field in small heaps, where it lies sometimes for two or three weeks [you might have said months—Ed. FARMER.] and then send a boy or a hired man to spread it on the land, when the consequence is that on the spots where the heaps laid the grain will lodge and spoil, while on the outskirts it will be so poor that it will need a drum and fife to get it together. I almost universally find that where this mode is practiced, the proprietor takes no agricultural paper, and will almost guarantee to every sensible farmer that if he will subscribe for the NEW ENGLAND FARMER, or some other good agricultural paper, and try my mode of applying manure for one year, he will never abandon it.

This last mode of applying manure used to be the exclusive mode in this section of country, but ten years' experience and observation of a different mode has brought farmers around, and I do not know of an individual in my section who does not now apply it on my plan, except as before stated, or on light dry sand.

My rule for applying manure is simply this: After the field has been ploughed and dragged down, the manure is loaded on wagons and taken direct to the field and spread on the land right from the wagons. In ploughing, each land is laid off about twenty-one feet wide. By driving the load in the middle of the land, it can easily be spread from furrow to furrow, and the men being on the wagon can at once see when they get it all even. With a new hand I always go out myself with one load, and see that he starts right; after which there is generally no farther trouble.

After the manure is applied to the whole field we put on the gang plough. And here allow me to say, that, of all the implements I have ever used for putting manure on the land in its proper place, according to my idea, this suits me the best. It has a wooden frame, with three small ploughs attached. It has handles like a plough; also, two wheels, one on each end, which can be lowered or raised by means of bolts and screws, and guaged to run one, two, three or four inches deep. It puts the manure under as effectually as a plough. I generally set it to run about two inches deep, which is about my idea of the proper depth to cover manure.

Now for the effects. A little experiment just comes to my mind, which although it was published several years ago, it may not be amiss to give again at this time. It was simply this: I purchased from a neighbor about forty loads of manure and applied it to one portion of a field, the whole of which was to be sowed to rye; the other portion of the field had no manure. In other respects the treatment of the whole field was precisely alike. Each portion of the field required the same amount of rye for seed. The manure cost me fifty cents per load. When the crop was harvested and sold, the manured part paid me $2.50 per load, over the unmanured, the first year; the second year it made $2.00 per load more, and the third year $1.50; making $6.00 per load, besides effecting a permanent improvement in the land.

Allow me also to say that instead of one small barn holding the products of my land, as formerly, I have been compelled, from year to year, to add to my buildings—having this summer added another barn 28 by 48 feet until now I have capacity or building room enough to store at least from 150 to to 200 tons of hay and grain, and from present appearances I shall probably nearly fill them all this year, and that from just about 100 acres of cleared land, less about twenty-five acres in corn, potatoes, buckwheat and pasture.

JURIAN WINNE.

Bethlehem Centre, N. Y., July 1, 1869.

WARTS ON COWS' TEATS may be removed, says the *American Rural*, by painting them with Tincture of Iodine.

THE HUMOR OF FARMING.

There is some humor connected with farming. The newspapers inform me that I own a model farm, and that I derive a large profit from farming. So I do. But it is profit in the higher faculties, and not in the pocket. A gentleman from Baltimore wrote to me as follows:—

"Dear Sir:—I see by the papers that your farm netted you last year thirty-six thousand dollars. Will you tell me what crops you raise, and what is your method? I have a farm of two hundred acres near this city, and I have never yet been able to make it pay expenses. Will you tell me how I can make it as profitable as yours?"

I replied (though I never sent it), "Dear Sir: Don't change a particle. Keep on just as you have done, and your farm and mine will be as like as two peas. Your farm is already just as profitable as mine. Truly yours."

It is a matter of surprise how much money may be buried in a small piece of ground. Indeed, many gentlemen *are* surprised. Simple as a smiling piece of ground looks, as it lies before your contemplative eyes, it will prove a match for your cunning. To drain it (and every piece of ground, wet or dry, should be underlaid with drain-tile), to deepen it (and no farm except mere sand is well ploughed that has not been mellowed eighteen inches deep), to gather off the stones, to dig out boulders, and blast the rocks, to lay boundary walls to enrich the whole with abundance of manure, but above all, to do a goodly amount of grading, will prevent any man from hoarding his money.

Then one must take account of work done twice and thrice over, because you did not know how to do it right the first time. Drains two feet deep, that must go down four feet; trees set where you don't want them, and moved to where you don't want them either, and moved again; fancy crops, by which I mean crops from seeds for which you pay extravagant prices, whose yield is in an inverse ratio to the descriptions upon which you bought; these, together with experimental manure, and new machines for saving labor, and newer machines, and machines still newer, will give one an agreeable relaxation if he is fond of spending his money.

But if a man is conceited, and desires to be brought to a realizing sense of his proper place in creation, I advise him to attempt grading. Grading is the art of recreating the world. It makes valleys where nature made hills. It makes hills where the ages have made valleys. It changes a northern slope into a southern one. It smooths off the undulating face of grounds, as a flat-iron takes out the wrinkles and creases of a sheet or tablecloth. One has no idea how thoroughly the world was made until he undertakes to remake it. I never admired hills as much as since I made a small one. I got it up about four feet high and stopped! It was a good lesson. I now look with an increased respect upon the neigboring hills. I had before no conception of what it cost to make them.—*Henry Ward Beecher.*

How to make a Cold-Chisel.—Farmers and gardeners frequently need a good cold chisel for light work, such as cutting off rivets, nails, or pieces of hoop iron. A piece of bar-steel, and the forging it into proper shape, will cost from fifty cents to one dollar. Those persons who want the use of a cold-chisel only once a week or so, do not always have the money to spare for a tool that they have but little use for. Therefore to get a cheap chisel, that will subserve all the purposes required, make use of a large flat file that has been worn out. Break off one end, so that a piece will be left about eight inches long; heat it in a charcoal fire to near redness, and let it cool gradually. Then the steel will be soft. Now grind one end square and true for the head end, and form the cutting edge by grinding at the other end. Thrust the cutting end in a charcoal fire, in the cook stove, until one inch is red hot. Now cool half an inch of the edge in cold water, which will render the edge quite too hard. Watch the color of the steel as the different shades appear near and at the cutting edge, and as soon as you see a light straw-color on the surface, plunge the chisel into cold water. By this means you will get a cold-chisel sufficiently hard on the edge to cut iron, and so soft and tough in the part above the edge that it will bend rather than break.—*Exchange.*

EXTRACTS AND REPLIES.

DWARF APPLE TREES.—CROPS IN MAINE.

How about the Dwarf Apple tree? Are they the best and quickest way to get an orchard, and are they a long lived and hardy tree, and will they grow on sandy land, &c.?

We have two starch mills here and another is now building. Our potato crop brings more money into town than our stock. Our crops look promising. Grass is looking well. Corn is small, but it is going ahead now. There are many kinds of mowers in town, and every farmer has the best—so they say. We are selling our wool for forty to forty-two cents a pound. Farmers met with a great loss on sheep, last winter. Our cows never did better than this season. God bless our country and everybody in it. J. O.

South Andover, Me., July 4, 1869.

Remarks.—In relation to dwarf apple trees, our own experience has been such that we cannot recommend their general cultivation, though a few trees in the garden may be well enough. Those that we tried were imported with dwarf pear trees.

In his "American Fruit Culturist," Mr. Thomas says, "for summer and autumn sorts, dwarf apples are valuable in affording a supply to families. They begin to bear in two or three years from set-

ting out, and at five or six years, if well cultivated, will afford a bushel or so to each tree. A portion of a garden as large as the tenth of an acre, may be planted with forty or fifty trees, without crowding. All the different varieties of the apple may be made Dwarfs by working on the Paradise or Doucain stock—the former are smaller and bear soonest; the latter are larger and ultimately afford the heaviest crops. Among the handsomest growers as dwarfs, are Red Astrachan, Jersey Sweet, Porter, Baldwin, Dyer, Summer Rose, Benoni, and Bough."

"Sandy land" is rather an indefinite term. Most of our land is more or less sandy. A hungry light sand is not good for apple trees, neither is a heavy clay. Potatoes and corn furnish about as good an analysis of soils for apple trees as any of our chemists can. Wherever they grow well we expect that apple trees will do the same.

USES OF SORREL.

It is so seldom that editors ask advice of their readers—and I suppose it is not often they need it—that I willingly take an hour, whilst my hay is drying, to answer your three or four questions about sorrel. We should not question but what God's wisdom can be discerned in the creation of sorrel. In my boyhood I was told that farmers when they could not get hay seed, would sow sorrel seed, in preference to letting their land lay barren. I remember reading, in years gone by, in some agricultural paper, an article in which the writer stated that he ground up a large lot of sorrel seed for his swine, and found it almost equal to other grain.

Now, for my own experience. Some years since, having a piece of land covered with sorrel, I told my hired man one cloudy day to mow the sorrel and put it into cocks. It was done; and it remained there till planting time the next year. I hardly knew what to do with it; but being about to plant a field of potatoes, I took the sorrel, and put the same amount in bulk into the hill that I should of manure, and planted the potatoes. The potatoes and sorrel came up about the same time. The sorrel, however, came so thick that but a single leaf could grow from a seed, and the leaves were so crowded that they grew very slowly. When the potatoes were about three inches high, the sorrel was but about one inch high. I ploughed between the rows,—as I do for all hoed crops,—running the land side close to the row, leaving a ridge of fine mould near the plant. I then with the hoe covered the sorrel, and that was the last seen of it. The labor was no more than with other manure, and the crop was equally as good.

ROBERT MANSFIELD.

Wellesley, Mass., July 12, 1869.

REMARKS.—We are glad to look once more on the firm, round penmanship of our old friend. We were almost afraid he had forgotten the NEW ENGLAND FARMER. Possessing the happy faculty of looking on the bright side of things generally, and of farming in particular, his communications are always acceptable and cheering. Even sorrel is not all dark, nor all sour to him. The seed is good for fattening pigs, and the hay for making potatoes grow! Surely nothing is made in vain. We are so pleased with his prompt answers to our inquiries, though right in hay time, that we can afford to smile at the sly joke he perpetrates at our expense, by saying that editors seldom ask or need the advice of their readers. If we had printed a single paper during the past ten years without asking their advice, or without showing very plainly that we needed it, we might have taken it all in sober earnest. But when our own often repeated appeals for the advice of our readers are backed by the much used formula of our correspondents—"Can you or *some of the readers of the* FARMER inform me," &c.,—we cannot think there was any need that friend Mansfield should put Josh Billing's "*Nota bene*, this is sarcasm," at the close of his first sentence. But, "the wounded bird flutters!" Not at all; our correspondent must have meant somebody else.

FROG-SPITTLE INSECTS.

In connection with an article written by E. K. Baxter, of Sharon, Vt., and published in the FARMER of May 22, (Monthly, page 329), we requested our correspondent, I. B. Hartwell, Esq., of Wilkinsonville, Mass., to reply more fully than we did to Mr. Baxter's inquiries. Mr. Hartwell kindly responds by saying that not being able to add any valuable information himself, he called the attention of Prof. B. D. Walsh, editor of the *American Entomologist*, to Mr. Baxter's article. In that valuable magazine for July, we find the following reply:—

The frog-spittle insects belong to the genus *Aphrophora* in the *Cercopis* Family of the Order of the Whole-winged Bugs (*Homoptera.*) We have ourselves found the *Aphrophora quadrangularis* of Say very abundant in the larva, and occasionally in the perfect winged state, in the well-known "frog-spittle" upon grass and various weeds growing among grass. Usually but a single larva is found in a single mass of "frog-spittle," and of course this so-called "frog-spittle" is nothing but the sap pumped out of the infested plant and discharged from the body of the larva. The perfect insect, which is fully one-quarter of an inch long, is of a pale dull brown color with oblique bands of dark brown; but the larva is of a shining black color with pale yellow markings, so as to be very unlike the winged fly. There are several other species of Frog-spittle insects, one of which inhabits in great numbers the twigs of the Red Osier Dogwood. Mr. E. K. Baxter, of Sharon, Vt., writes, as you point out, in the NEW ENGLAND FARMER of May 22, 1869, that some species or other belonging to this genus of insects "has done much damage in Vermont to the hay crop during the past two or three years," and that it is believed by some that in consequence of its depredations the quantity of hay grown on some fields was one-third less, to say nothing of the depreciation in the quality of the crop." This is perfectly possible, provided that the insects were sufficiently abundant; but we ourselves have never met with them in any such exuberant numbers.—*American Entomologist.*

The editor of the *Mirror and Farmer* speaks of a field on which the frog-spittle or "snake foam" was so abundant that in spots the ground seemed white with it. We understand that some farmers ascribe the unusual fatality among sheep last winter to the unusual abundance of this froth or foam on the grass last season. But as we saw more or less of it on grass many years ago, we can hardly believe it is poisonous to stock. Dr. Hartwell

closes his note to us with the remark, "I intend to observe more carefully these spumiferous insects, which have already made their appearance this summer, and if the investigation results in any thing note-worthy, I will communicate it to the FARMER."

A NEGLECTED FARM IMPROVED.

I see by the date on my label that the time for which I paid has about expired, and thinking that I can't well get along without your paper, I enclose another payment, and would say that I think I get well paid for my outlay in reading the different opinions of old farmers in regard to their method and way of farming, management of trees, &c.

Now a word for myself. After farming it for several years in New Hampshire, the Granite State, two years ago last March, I moved to the State of Vermont, where I had been looking out for a good chance for several years. At last I got my eye on a place that I thought I could get a living on, at any rate. The farm was sold at auction, and a friend of mine advanced the money. The place was formerly known as the Stephen Tryon farm. It lies about two miles southwest of White River Junction. There were a little short of 200 acres, on which were some 1200 good grafted apple trees, a lot of selected pear trees, plums of several kinds, grapes, gooseberries, blackberries, &c. The trees, as well as the farm generally, had been much neglected for several years. The fences, buildings, and everything else showed the effects of this neglect. The amount of hay in the barns at the time of the auction did not add much to the price bid for the place.

Well, after getting possession, the first thing I did was to make a division of mowing and pasturing, so that I could have a place to put horses, cattle and sheep. This was no small job. I then ploughed, and planted corn and sowed other kinds of grain, as much as I thought I could manage; and the 10th of June I commenced on the apple and pear trees, giving them a fair trimming, as I thought. In the fall of that year I harvested fifty bushel of pears and about 200 bushel of apples. Last year we sold $1000 worth of apples. A year ago last spring we put on a two-story front to the house, 26x30 feet, and last fall we did not have room at the barns, and this last spring we altered over some of the barns and put on new addition enough to hold some fifteen to twenty tons more,—and think we shall be short for room this fall. We have now some thirty-five acres that are planted and sowed. In regard to time for cutting grass, my rule is, if the weather is right, to cut clover as soon as it gets well headed out, and herdsgrass in first bloom. I commenced haying this year the 24th of June. When it has been good hay weather I have worked at haying; when doubtful, I put the boys into the corn field. By so doing I get my haying along without any of it being wet.

But fearing that I am taking too much room, I leave the rest of my thoughts for another time, and not use them all at once. AMOS FRENCH.

Hartford, Vt., July 12, 1869.

REMARKS.—Thank you for so many of your thoughts; but don't keep the rest of them till they stagnate. Our thoughts have been compared to the water in a well, which is all the better for for drawing up a bucketful occasionally. There are so many neglected farms in New England, that we like to publish accounts of the improvement of any one of them. Instead of taking too much room with the details of your operations, we should have been very glad if you had taken more. You speak of the empty state of the barns at the time of the auction sale of the farm, and also of the increased products which have compelled you to "pull down your barns and build greater." We think many will inquire, How did you set that ball in motion? How did you get the manure to start with? And others questions will arise in the minds of the thousands who will read your description of your farm, and it is well for them, and perhaps for yourself, that you did "not use all your thoughts at once."

WHITE WASH FOR BARNS AND SHEDS.

I would like the best known receipt for white wash for outside work of barns and sheds, &c.

North Chester, Vt., July 6, 1869. J. C. CARR.

REMARKS.—There are many ways of preparing white wash. The *Scientific American* says, "take a clean water-tight barrel or other suitable cask, and put into it half a bushel of lime. Slake it by pouring water over it, boiling hot, and in sufficient quantity to cover it five inches deep, and stir it briskly till thoroughly slaked. When the lime has been slaked, dissolve it in water, and add two pounds of sulphate of zinc, and one of common salt. These will cause the wash to harden, and prevent its cracking, which gives an unseemly appearance to the work. If desirable, a beautiful cream color may be communicated to the above wash, by adding three pounds of yellow ochre, or a good pearl or lead color, by the addition of lamp, or ivory black. For fawn color, add four pounds of umber—Turkish or American—the latter is the cheaper—one pound of Indian red, and one pound of common lampblack. When applied to the outside of out-houses and to fences, it is rendered more durable by adding sweet milk, or some mucilage from flax-seed; about a pint to the gallon will suffice."

The following has been highly commended for an incombustible and durable wash for roofs and outside walls of buildings, "take a sufficient quantity of good stone lime, and slake it carefully in a close box, or mortar bed, to prevent the escape of steam, and after slaking, pass it through a sieve. To every *six quarts of this lime*, add *one quart of rock or Turk's Island salt*, and *one gallon of water*. The mixture should be boiled and skimmed clean. To every five gallons of this, add by slow degrees, *three-fourths of a pound of potash*, and *four quarts of fine sand*. Coloring matter may be added. Apply it with a common paint brush."

PRICES OF FARM PRODUCE TOO HIGH.

We notice in your cattle report of this week, that you take a long look back at the cattle market, viz. thirty-four years and find the price very low as compared with the present. We think it would be hardly necessary to go back to 1835 to find a year when prices were nearly or quite as low on beef and pork as then. We refer to August and September, 1862, when *good* grass fed cows and steers could be bought at three to four cents per lb. dressed weight, and fat hogs at three to three

and one-half cents per lb. live weight in this market. Add one-half cent per lb. for transportation to Brighton, and I think you will find the market of 1835 equalled in cheapness at a comparatively recent date. Now if these things are so; and as corn is only about twenty-five per cent. higher it was in 1862 and beef and pork *more* than 300 per cent. higher, where is the justice of the universal cry of the producer that "we don't make anything?"

Furthermore we wish to inquire is there any *real* necessity for the present high prices of meat. If there is no necessity why continue it longer? If there is, what and where is it, and when and where is it to end?

To those producers who grumble because they cannot get the eighteen or twenty cents for their beef and pork, fifty to sixty cents for their butter, $1.00 for their wool, &c., which they obtained during the war, we refer to the prices of 1862 and the ten years previous, when the country was, as now, in a state of peace. We would also ask them to show us five consecutive years in the history of the United States or *any other* nation when prices for farm produce have ruled so high in comparison with labor and manufactured goods as the five years just past. We think brighter days are coming for those consumers who LIVE IN HOPE.

Montpelier, Vt., July 16, 1869.

REMARKS.—If "Live in Hope"—who has neglected to give his address, and is therefore hardly entitled to a hearing—will accept as a gift a calf of a week old, and nurse and feed it up through the months and years necessary to make such beef as he demands of his butcher, we think he will put himself in the way of answering his own questions. Does he believe that the three-cents-a-pound beef and pork of 1862, or 1834, paid the farmer a decent living price for his labor? We admit that he is about correct in his quotations of prices in 1862, and our reporter probably referred to those of 1834, simply in connection with the importation of Mr. Clay's herd at that time. It is true that prices of meat and other farm produce have been ruinously low at periods much less remote. These unremunerative prices have driven great numbers of farmers' sons from the ranks of the producers to those of "consumers who live in hope." And we venture to guess that "Live in Hope" himself is one of those who have abandoned the farm for a more lucrative employment; that he is one of those who finding farming to be an unprofitable and laborious business, quit in disgust, believing that brighter days would dawn on him in another pursuit.

TREATMENT OF KICKING COWS.

I have noticed in the FARMER several methods of treatment for kicking cows, and have in times past tried all of them, except that of seizing the cow's leg and holding it by main strength—this method I should prefer to leave with the originator. I think Mr. Foster's manner the best, viz: kind treatment; but sometimes we find an animal so stubborn as not to be subdued by kindness, and it is not convenient to spare her for beef.

In such a case I would recommend the following, which I do not recollect seeing in print. Take a small strap, long enough for the purpose, bend the four legs so as to bring the foot up to the body, put the strap round the arm and small of the leg near the hoof crossing between so as not to slip off over the knee, and buckle. In this condition it is an impossibility for a cow to kick; they may come to the knee a few times but are soon quiet.

In confining the hind legs either singly or together, there is danger of spoiling the animal. A spirited cow will struggle and sometimes is thrown, when the hip, stifle or some other part is injured, perhaps for life.

RAISING CALVES.

I see that Mr. C. F. Lincoln and Mr. W. H. Jordan disagree somewhat as to the best manner of raising calves. Now, the common practice in this vicinity is rather between the two methods, viz: the calf remains with the cow about four days or until the milk becomes good, when he is easily learned to drink, and after a short time is put upon skim milk, to which is sometimes added a little scalded meal, which is continued until fall—perhaps through the season. Usually they are turned out to grass. I see Mr. J. objects to calves going to grass. But grass seems to be the most natural. I let them run with the cows; others pasture them separate.

We can show very good stock raised in this manner; I think equal to any, taking trouble and cost into consideration. Mr. J. says his neighbor has a steer one year old which girts "five feet and one inch,"—a grade Durham. If he will come this way we will show him yearlings which will girt from five to six feet, raised in our way, and nothing but *native* stock at that. We will also show him two year-old native heifers, raised in the same way, that girt five feet and a half or more, and will make a pound of butter each per day.

NATIVE STOCK.

Now, Messrs. Editors, where can we find a breed of cattle possessing the combined qualities required by the farmers of our hills more fully than the natives, when bred a series of years with the same care as are the *fancy* breeds? We want working, beef and dairy stock combined. Almost any breed will work, but some require a third more keeping than others do. The Durhams are large for beef, but they also take all the richest pastures, the best of hay, and the *shakings* of the meal bag. Who ever heard of a big butter cow among the Durhams, according to cost. The Ayrshires are great for milk but not for butter; besides they are too small for beef, but are rather easily kept. The new fancy breeds—Alderneys and Jerseys—probably give the richest milk, but I have information from those who have them that they are very small milkers, which spoils them for cheese dairies; besides they are small and ill-looking animals.

Now where shall we find the flowing pail of milk for cheese, or for two pounds of butter each per day, combined with a handsome form, and from six to twelve hundred pounds of beef, in such perfection as in well bred native stock, taking into consideration the cost of breed, keeping, &c.

Montpelier, Vt., July 10, 1869. A. D. ARMS.

WARTS ON HORSES.

I have a horse with warts on his face, and one as large as a good sized hen's egg betweeen his fore legs. As he is a valuable animal, I am very desirous to ascertain a remedy for taking them off, or driving them away. BYRON W. POLLARD.

New Haven, Vt., July 1, 1869.

REMARKS.—Warts on animals may usually be destroyed in two ways: first by cording them. For a small, young wart, tie a horse hair about it, close to its roots, and tighten it two or three time

a week. For larger ones use a thread of strong silk, wax it well, tie about and tighten as with the hair.

Another mode, and one which we never knew to fail, is to pare the end of the wart with a very sharp knife, until there is a slight appearance of blood, then touch it with a pencil of *lunar caustic*. If the caustic is not at hand, a little *nitric acid* is as well. Apply the acid by tying a bit of rag to a stick about the size of a quill, and with that touch the end of the wart, every day, until a change in it is observed. The acid must not touch any place but the end of the wart.

BEST WHEAT FOR SOUTHERN NEW ENGLAND.

I would like to inquire of some of your readers who may be posted, as to the best wheat to be raised—fall or spring; also, the best variety for cultivation, in this latitude, twenty-five miles south of Boston, and on light, but good corn soil.
Franklin, Mass., 1869. F.

REMARKS.—We hope some wheat grower in the latitude of our correspondent will favor him and other readers of the FARMER with a reply. In the Massachusetts Transactions for 1867-8, are the statements of several farmers, who took premiums on crops of wheat. Mr. Kilburn of Worcester county raised 2040 pounds of the blue-stem winter wheat, sowed August 27. He remarked that he had sowed that variety yearly for twenty years, and it had not deteriorated.

FEED FOR A WORKING HORSE.

What is the best feed for a horse that is worked on a farm to a greater or less ex ent, and is also driven four miles every day, and some days ten or fifteen? Have been feeding meal twice per day and oats at noon. How many quarts of oats equal a quart of meal? What is the relative proportion between the two? PHILÆTER.
Melrose, Mass., June 28, 1869.

REMARKS.—The amount of food to be given to a horse each day, should depend upon two things; the size of the horse, and the kind and amount of work required of him.

A horse worked all day in the usual employments of the farm, changing from one work to another, will not shrink so much, nor require so much food, as a horse on the road travelling at the rate of eight miles per hour, for two hours.

For a roadster we should prefer oats, and even for heavy teaming, should rather have a mixture of oats and corn meal, than an equivalent in meal alone.

Among farmers and livery stable people, oats are usually considered to contain about one-half the nutritive power that corn meal has. According to the analysis which we have seen, however, there is not so much difference in their nutritive properties. In the items of starch, gum and sugar, the oat has three-fourths as much as the corn meal.

No other grain will impart so much spirit to the horse as oats. They seem admirably adapted to his nature, so that he will gain spirit, courage and strength from them when all other feed seems to fail.

As in the case of roots fed to milch cows, it is evident that their value does not lie entirely in the amount of the merely nutritive properties which they possess and impart, but in assisting in a more perfect digestion of other food taken, or sustaining the body by some other process, which is as yet to us mysterious or unknown.

Horses are quite often *over-fed*. Six quarts of *crushed* oats, with about *fifteen* pounds of good hay, cut, moistened and mingled with the oats, will sustain a horse, weighing between nine and ten hundred pounds, in any ordinary labor, if he is used judiciously.

ROTATION OF CROPS.

The close observer of nature will see by the change of the growth of the forest the true system for the cultivation of plants for the sustenance of man and of our farm stock. When growths of hard wood are removed they are succeeded by evergreens or something quite different from the first growths, for the harder woods have exhausted the potash and other minerals that are required to build up the structure of the perfect tree. Consequently the next growth will be the pine or other softer varieties which can subsist on the minerals that were left in the soil by the first growth. This second growth by the annual shedding of its foliage and perhaps by some not well understood effects on the soil, will restore it to its original fertility, when hard wood trees will again grow.

Here is an important lesson for the farmer. All crops should be succeeded by those of an opposite character—a *white* by a *green*, or the reverse—with the exception of the grasses. By that means the minerals will be more equally balanced in the soil. From a long experience and careful observation, I have come to the conclusion that this system must be adopted, in connection with the manufacture and saving of manures, if we would cover our New England hill sides and valleys with profitable and paying crops.

These remarks apply to all or nearly all crops with the exception of the onion patch. And I wish to impress the fact of the importance of a judicious rotation on the minds of my brother farmers. If your plans are such that you cannot adopt the system in full in one season, begin it at once, and as you work into it, you will find that you will make full as good crops with one-half the manure and leave the soil in better condition.

I could mention numerous experiments that have come under my observation in support of my theory, as I have reduced it to practice on my own farm for the last ten years, and the result is it has more than doubled my crops. H.
Epping, N. H., 1869.

BOTS IN HORSES.

I cannot refrain from writing a few words about bots, since reading what was published in the FARMER of the 17th of July. I believe bots *can be* removed from horses without harming them in the least. First, give the horse two quarts of new milk, sweetened with one quart of molasses; second, fifteen minutes after, give the horse two quarts of strong sage tea; third, twenty minutes after giving the sage tea, give the horse three pints of currier's oil. The bots fill themselves with the milk and molasses and become lazy, the strong sage tea shrivels them up, and the currier's oil, acting as a cathartic, carries them from the stomach, when they pass away from the horse. In giving the

medicine put an open bridle on the horse, take him into the barn floor, step upon a girt or scaffold, draw the horse's head gently over the beam, holding up on the bridle, when his lower jaw will drop; then insert the neck of a bottle, and pour the contents gently down the horse. *Do not gag the horse or pour the medicine into his nose.* This is a simple remedy, easily applied, and I hope our Quidnick friend will try it and report the result in the FARMER. I have seen it tested, and am convinced of its efficacy. D. L. S.

East Madison, Me., July, 1869.

TOMATO SUPPORT AND MULCH.

Among the many contrivances to support tomato plants, the best and cheapest method I have ever adopted, is to place straw around and under the foliage some six to eight inches thick, which will afford all the support required, and when the tops become heavy, they will fall gracefully over on the straw bed so invitingly offered them, and thus display the fruit to the sun, where it will ripen cleanly and sound. The straw cushion also is an excellent mulch, highly beneficial to the plant.

Shoreham, Vt., July 20, 1869. W.

AGRICULTURAL ITEMS.

—The Pennsylvania farmers believe the average crop of rye straw to be one ton.

—Salt sprinkled between the leaves of cabbage is said to be an efficient remedy for lice.

—A root of clover five feet long has been exhibited at Centerville, Mich.

—A little spirits of ammonia is said to be the best known remedy for bee stings.

—A California paper says many farmers in that vicinity cut off the top of young wheat, with mowing machines, to prevent too rank growth of straw.

—A lot of Texas beef was recently received at New Orleans in a steamer fitted up with refrigerator apparatus, in good order, after a five days' voyage.

—While Mr. Aaron Buzzell, of Gilmanton, N. H., was driving a cultivator through his corn field, the implement struck a stone, throwing its handle against Mr. B.'s side and breaking one of his ribs.

—The Corydon, Iowa, *Monitor* says a farmer near Bloomfield sold the crop of timothy on 300 acres, as it stood, for $2400 cash. The parties purchasing bailed it on the ground for the St. Louis market.

—Mr. Cooper Sayre, of Ontario Co., N. Y., sheared 150 pounds of wool from eleven yearling Cotswold rams. He left at the office of the *Country Gentleman* a sample of wool, fourteen inches long, of one year's growth from a yearling ewe.

—Mr. C. R. Fuller states in the *Rural New Yorker* that his father killed a horse by administering sassafras tea by turning it from a bottle into the animal's nose. On opening the horse its lungs were found full of the tea.

—Jonah Swan, of Milton, Vt., has a grade Durham cow, five years old, that averaged through the month of June forty-three pounds of milk per day, and did it without any extra feed, running with nineteen other cows, and having the same feed.

—Mr. S. D. Hayes, of Boston, has analyzed a specimen of the weed known on the Connecticut river farms as "Fox Tail" or "Colt's Tail," sent to him by Mr. Wm. Fairbanks, of St. Johnsbury, Vt., and concludes that it is not poisonous to horses or cattle.

—A poisonous bush has proved very destructive to sheep in Australia. It is a pretty shrub about four feet high, with a bright scarlet blossom. The botanical name is *gastrolobium grandiflorum*, and over 2000 sheep have been lost out of one flock from eating this bush.

—George W. Penney, of Newark, Ohio, sheared 484¾ pounds of wool from forty two-year old Merino ewes, an average of twelve one-sixth pounds. Last year the same ewes gave fleeces of the average weight of eleven one-eight pounds. Such is the remarkable report he furnishes the *Rural New Yorker*.

—A horse that is in the harness every day needs an abundance of food and the right kind. Oats make more muscle than corn, and should always form part of the food of a hard-working horse. Corn gives plumpness and imparts warmth. The colder the weather, the more corn; the harder the work, the more oats.

—Mr. Meehan, of the *Gardener's Monthly*, is very positive as to the uselessness of attempting to preserve the tap-root in transplanting. He says "the shortening of a tap-root is of no more injury to a tree than the shortening of the finger nails to a man. This matter was settled by Senebier and others over a hundred years ago. Their experiments we have repeated; and no intelligent man teaches any other doctrine."

—The Laconia N. H., *Democrat* says there is a calf in Gilmanton, otherwise all right, that has not a sign of a tail. While a group of persons were looking at the calf, the other day, and wondering how he would manage in fly time, they were joined by a city bred individual, a graduate of Dartmouth College. The learned graduate, after listening to the comments, inquired how old the calf was, and on being informed, innocently asked, "Do calves of that age usually have tails?"

—A correspondent of the Missouri *Journal of Agriculture* says that flies are so troublesome to horses on the prairies of that State, that though the feed may be plentiful, they gradually fall off in flesh, and if a horse is sick in fly-time they soon make an end of him. He says all washes he has ever tried are useless; nothing but a net or sheet will protect the animal. He recommends that those not used be shut in a dark stable during the day and turned out at sundown. In this way he says you will not only confer a comfort on your animals, but have the satisfaction of seeing them grow fat and sleek.

Ladies' Department.

OUR CHILDREN IN HEAVEN.

BY ADELAIDE PROCTOR.

Our God in Heaven from that holy place,
To each of us an Angel guide has given;
But mothers of dead children have more grace—
For they give angels to their God and Heaven.

How can she sin? Our hearts may be unheeding,
Our God forgot our holy saints defied,
But can a mother hear her dead child pleading,
And thrust those little angel-hands aside?

Those little hands stretched down to draw her ever
Nearer to God by mother loves—we all
Are blind and weak, yet surely she can never,
With such a stake in Heaven, fail or fall.

She knows that when the mighty angels raise
Chorus in Heaven, one little silver tone
Is hers forever, that one little praise
One little happy voice, is all her own.

We may not see her sacred crown of honor,
But all the angels flitting to and fro
Pause smiling as they pass—they look upon her
As mother of an angel whom they know.

* * * * * * *

Ah, saints in Heaven may pray with earnest will
And pity for their weak and erring brothers;
Yet there is prayer in Heaven more tender still—
The little children pleading for their mothers.

DOMESTIC ECONOMY;

OR,

HOW TO MAKE HOME PLEASANT.

BY ANNE G. HALE.

[Entered according to Act of Congress, in the year 1866, by R. P. Eaton & Co., in the Clerk's Office of the District Court for the District of Massachusetts.]

CHAPTER XVII.

A CHAT ABOUT CARPETS.

Now that house-cleaning is accomplished, our thoughts turn naturally towards furniture—floor-coverings, carpets, rugs and mats first claiming attention. For, besides contributing to the adornment of a house and saving much labor of sweeping and scrubbing, they are great protections against cold and dampness,—and thus promote comfort and health. Hence "a bare floor," has become almost a synonym for discomfort and untidiness; and the laudable ambition to furnish her domicile with floor coverings,—beautiful, if possible, as well as useful,—leads many a housekeeper to wonderful efforts in their manufacture,—as it did the mother of the younger Beechers. Who has not read with interest the account of her weaving cotton cloth, designing a pattern, procuring paint, and then painting it—thus making that famous carpet which for many years adorned her prim parlor, receiving the admiration and exciting the envy of her husband's parishioners? Possibly the ingenious work of this woman gave a hint towards the manufacture of canvass carpeting, now so widely used for floors where much walking is expected, or where there is great liability to dampness or dust.

An unpainted floor, without rugs or mats of some kind, is always a great trial to a housekeeper's patience. It is almost impossible, with the most faithful scrubbing, to remove the traces of muddy tracks or slops from its blank surface (that sets even the shadow of a mark in the boldest relief;) and the most abject scouring is needed to keep the pitiless boards clearly clean. It is to be hoped that the righteous souls of few housewives, at the present day, are vexed with the care of such a floor, when the toil to make it clean and the anxiety to keep it clean can be prevented by covering it with a coat of cheap paint which she herself can apply.

A bright orange is the most durable paint for a kitchen floor. Make this of yellow ochre, or Brandon yellow, boiled linseed oil, and a little spirits of turpentine, according to the directions for mixing paints given in Chap XVI. Give the floor three paintings; wait two days between them, so that the paint shall get well hardened. Then varnish it, and let this also become very dry before stepping upon it. If this floor is always washed with a cloth, by hand, out of clean suds,—dirty suds sullies the color—and a thin coat of varnish is applied every spring, it will retain its good looks a great many years. In the fall lay thick carpet paper upon it, or two or more layers of newspapers, and upon that strew oat or wheat straw, or dried grass of any kind to the depth of an inch, and then spread and tack down a home-made woolen carpet—directions for making which will be given further on in the present chapter.

Dining-rooms, stair-cases, and entries look cool for summer and are easily kept clean, when painted in imitation of marble. Give the floor a coat of white paint and let it dry thoroughly; then, while applying the second coat, trace upon it with a feather dipped in black paint (made by mixing lamp-black and oil) the veins and spots seen upon marble, and blend and shade the two colors with a dry brush. A person of very little ingenuity, who has ever seen marble can easily imitate it, and thus make a handsome floor-covering that does not show dust and is very durable. Remember that carpets should never be tacked over a painted floor without something beneath them to receive the dust, that sifts through them and grinds and cuts the paint if not intercepted.

Painted carpeting, by the multiplicity of its colors and designs, hides dust and stains, while rivalling in brightness and beauty the productions of the proudest looms, and is, therefore, desirable for chambers, dining-rooms and halls—apartments where there is much stepping, but not constant occupation. If, however, canvass carpets are used for apartments that are constantly occupied, as they are deficient in warmth, they should have laid upon them rugs and mats, in plenty,—especially

during winter. In selecting these carpets get only the well-hardened and thickly painted—such as are stout and stiff—all others are soon defaced. Varnish them immediately after they are laid; and, if they are subjected to much wear, varnish them every spring. For these, as for painted floors, use cheap copal varnish (quite thin—nearly as limpid as water) which must be thoroughly dried before the floor is walked upon,—a week is none too long to devote to this.

When procuring a painted carpet, if possible, get it in one piece large enough to cover the floor; because no matter how closely the edges of widths meet they will eventually wear away. If of several breadths the selvage must be cut away with a sharp knife, using a yardstick or rule to cut it perfectly straight—and the figures matched at the meeting of the breadths (they must never be lapped) so that the design is complete. This carpet should lie upon the floor without tacking; yet when made of a number of pieces, where there is much stepping, it is sometimes necessary to tack each at short intervals; but the less the better, and tinned tacks only should be used, as these do not rust.

A neat and nice summer carpet is the Canton matting—commonly called *straw carpeting*. It does not retain dust, is very easily swept, and is so cool and clean it should be on the floors of all bedrooms during warm weather; on account of these good qualities it is particularly desirable for the carpet of an invalid's room. It is apt to get brittle and to wear away about a hot stove or register in cold weather, but if a piece of painted carpet—lined by pasting thick brown paper to its wrong side—is laid where there is fear of this, it will remain strong and whole for years. The tinned tacks should fasten this to the floor—the breadths meeting closely. They should be cut long enough to be turned under an inch and a half at each end. This may be overcast with thread; binding tears away, and a hem is too clumsy.

A cheap and pretty covering for a chamber floor, or a staircase that is little used, is bright-colored wall paper,—one of low price and neat design; block or chain-work, or leafy and flowery patterns on a stone or clay-colored ground, are most suitable for this purpose. Cut and paste the breadths as for a wall, adding half as much glue directly to the paste as would be used for making glue water for the wall. The second day after it is pasted upon the floor varnish it as you would a painted carpet. It is better to varnish it twice, and then treat it in every respect as a painted carpet.

A cheap and tolerably strong carpet for common rooms is the Scotch or hemp carpeting. But don't buy a cotton carpet, or a cotton and wool, or a very low priced all wool; for the wool is sure to be shoddy, and the cotton fades very quickly, so that even with the greatest care, they look dingy and mean in a very short time. A home-made one of rugs is a great deal better and handsomer. If you cannot have that, content yourself with a few rags or mats of your own manufacture till you can afford a good ingrain woollen one, which, if of soft wool and well woven, is the most durable that can be bought.

The only advantage which a three-ply has over an ingrain is the greater variety of colors and figures which its style of weaving admits; but one of its plys is apt to wear off soon, and that gives the carpet a shabby look, and the pattern does not look well on both sides—as is usually the case with the pattern of an ingrain or two-ply—besides being much more expensive than that. A nice American ingrain carpet is handsome enough and good enough for any American home; but if women have more money than they know what to do with, they can buy tapestry and velvet; which, beautiful as they may be, require such careful usage to retain their good looks, even when of the very best of Brussels and Axminster, that it is much wiser to be satisfied with an ingrain and put, the surplus money into pictures for the walls.

In laying carpets it is well to remember that small figures, which require the webs to be frequently united,—thus tacking them together as it were—are a means of strengthening the fabric. They also give a neat appearance to a room, while seeming to enlarge it. And light colors—such as drab, light stone or buff—with white and light green, and a very little red, maroon, dark green or black—are most suitable for a floor that must be subjected to litter and dust. While browns, scarlets, crimsons, greens and other dark colors, with little or no admixture of lighter colors or white, should not be chosen for an apartment that is in constant use, unless one is willing to keep a dust-pan and broom constantly in hand. Blues and purples are miserable colors for a carpet. All the shades of brown are excellent; so are the yellow-greens; and the scarlet reds; and the corn-colored buffs.

Before cutting a carpet, having ascertained the number of breadths needed to cover the floor, be sure that the figures of each seam are so laid together that they will be correctly joined; as it frequently happens that by unequal weaving some breadths having only the same number of figures vary greatly in length. Then cut them long enough to make a double hem half an inch wide at each end. Hem these as soon as possible after they are cut with strong linen thread, well waxed. Then on the wrong side of the carpet, fasten together, with two or three stitches at every figure of the seam, the selvages of the two breadths. To sew these seams use the strongest of linen thread, stiffened with beeswax. Begin by fastening the thread at the right hand end of the seam. Then for the first stitch bring the needle *towards* you by passing it under the two outer threads of the selvage of the breadth next you; for the second stitch pass the needle under the same of the

other breadth in a direction *from* you. Again, bring the needle *towards* you, as in the first stitch, and then pass it from you, as in the second; and so on; thus making a sort of lacing together of the two edges, which results in an elastic, yet strong and flat seam. If the selvage is loose, or stretched, in any place, or if by making the proper joinings of the figure much fullness of one side is occasioned, draw in the outer thread of the edge by an overcast stitch. The breadths of velvet, tapestry, or any tufted carpet should be sewed in close overstitch and the seam pressed with a warm flat-iron.

Linings, whether of paper or cloth, add to the durability of a carpet. But if between them and the carpet is placed a layer an inch thick of straw or dried grass (see that no sharp substances, or very stiff straws are among them, as they would cut and injure the carpet,) then the dust will sift down among the straw, which would have remained on cloth or paper to chafe and wear the web of the carpet. A layer of cotton batting, or an old quilt, beneath the straw, gives elasticity to the carpet after the straw has become settled. For stair carpets the batting and straw are excellent. A good bocking is quite expensive, but it often saves more than its cost for the covering of the middle of a nice carpet; and may in emergency, with a good lining of straw and cotton, serve as a carpet.

Common iron tacks answer very well for fastening down woolen carpets. They are more easily taken out, and with less danger of tearing the carpet, if they are shielded by bits of leather through which their points are passed. This, children can do,—cutting the leather of old shoes into pieces a quarter of an inch square for the purpose.

Putting down a carpet is really too hard work for a woman; but, as there are times when some women feel obliged to do it, here are a few hints towards facilitating the job: It is important that the carpet lies straight; and that it is tacked straight, without strain or loop in any part. If it is scant of length, or strains, stretch it by pushing it gradually a yard, or more; then tack it lightly there, and go again over the same in the same way, two or three times. You will gain a little each time, which you will pass on by removing the tacks; and so proceed till you have the desired quantity at the end of each scanty breadth. A carpet-stretcher is of great service for this work. Very few have this, but a strong wooden rake fills its place pretty well,—or a wooden mopstick. If neither of these is accessible, it must be done by actual pushing, while crawling on the hands and knees—which many women do,—much to the disgrace of every whittling Yankee who has not made a carpet-stretcher.

Nothing prettier in the carpet line was ever made than the striped yarn carpets which the industrious housewife of olden times,—after she had pulled, carded, spun and woven wool enough to furnish clothing for her family,—used to weave from the spinning of the tag-locks. Proud, indeed, was she to set up her dye-pot and to try her skill in copying both in colors and weaving the most brilliant of Wilton stripes; and their harmonious tintings of green and drab, lighted up with scarlet and yellow, seemed always to fill the apartments that they bedecked with verdure and sunshine. Then there were her knitted carpets for stairs and narrow entries,—made (on long wooden needles,) of this same yarn, either in heel or garter stitch, as the fancy took her; striped either perpendicularly or horozontally, according to the proportion and variety of her colors. These were strong and beautiful.

But some sagacious woman found out that a web of coarse hempen threads, or twine, filled with a woof of yarn, made a much stronger and nearly as beautiful a fabric as that of yarn for both warp and woof. And not long after another saving mind (I think she must have been related to the renowned wife of John Gilpin) concluded to use her carpet yarn for other purposes, and substituted for it—what she had hitherto considered of no value—the narrow trimmings and clipings made in cutting garments. These, woven into the warp of twine, made a very pretty as well as serviceable carpet. She took out no patent for her invention, and even to this day, her work has copies in many a thrifty household. It is very desirable as a winter covering for a kitchen floor. Those who still retain the old-fashioned looms that once occupied one end of every farmer's keeping-room would do well to set the shuttle flying through a fabric of this kind.

The most common of home-made carpets is what is usually called a strip or rag carpet. Material for this may be found in any family where there are men and boys—pieces of thick woolen cloth that are left after cutting and mending their clothing, and the best portion of such garments when so worn out that they cannot be put to a better use. Selvage—listing of broadcloth, doeskin, and such sort of goods—is excellent for this purpose; and it is good economy to buy this of the tailors—as well as the pieces which they make in cutting men's garments, if you haven't material enough of your own. Both these pieces and the listing should be cut into strips a quarter of an inch or a little less in width. These strips, being of various lengths, must be sewed together by lapping ends so that they form a double square the size of the width of the strip and stitching neatly all around the lapping; thus making a piece several yards in length, which should be rolled into a ball. A great many of these balls should be on hand before beginning to plan the carpet. The different shades of blue, drab, gray, &c., should be sewed separately. Also the bright-hued flannel and delaine (in a dearth of these, gay tinted lining cambrics,) which are needed to relieve the more sombre hues of heavier cloths; but only plain, solid colors can be used. As these goods are thinner than the rest of the materials they must be cut twice the proper width, and used double. So, after joining their strips,

they should be folded in the middle and pressed flat with a hot iron.

About one hundred and fifty strips are needed to make a web one yard wide. Some persons prefer weaving a long piece of this width, cutting it in lengths, and sewing those together to make a carpet; but, if a frame large enough can be procured, it is better to weave a carpet the full width and length of the floor it is to cover, in one seamless piece. A web planned in plain stripes, six or eight strips to a stripe,—of drab, blue and gray, alternating with red, green and a little yellow or white,—black being placed beside each color to give it distinctness—the woof of black entirely—makes a handsome carpet. But a checked carpet may be made, using the same colors for the woof or filling as for the web; and stripes of diamonds and circles may be introduced among plain stripes with good effect, by cutting a sufficient number of strips in proper lengths for forming these figures.

The fabric must be woven in a quilting-frame. One end of each strip of the warp must be strongly stitched to the cloth heading of one of the mortised bars of the frame; every strip lying smoothly and just touching its fellows, so as to make a thick, even web. Then the end bars of the frame are to be inserted through the mortises of this and the other mortised bar, and fastened at a convenient distance. Over the space thus made pass the strips, and pin each tightly to the heading of the other mortised bar. Keep the strips in tight balls to prevent them from getting snarled, and the carpet is ready to be woven.

Begin by sewing a strip of the filling to the warp-strip which forms the right hand edge, lapping it well, and stitching around and across the double square thus formed; then, with your left hand take up six or eight alternate strips of the warp and pass under them the filling strip—this will make plain weaving of over and under the strips. Go across the web in this way, and then cut off and fasten your filling to the left hand edge, as you did at the right hand; then begin the next at the right, and proceed as before—being careful to make no mistake by passing over or under two strips instead of one. Some persons do not cut off the filling at the left hand edge, but pass backward to the right; leaving thus a loose selvage, which is neither so neat nor so durable as that formed in the manner just mentioned,—while it is very awkward to weave in a backward direction. Pass the fingers of the right hand ocasionally through the unfilled web, bringing them with force against what you have woven,—in order to press the filling thickly together and to make it straight. And to keep your work from drawing in, and so making it uneven and narrow, pin bands of strong cotton cloth to each selvage, and fasten them tightly around the ends of the frame.

When the warp is filled as far as you can conveniently reach, unpin the strips from the frame, take the end bars from their mortises, roll up the woven portion of the carpet over the bar to which it is attached, and replace the end-bars and fasten them; and then partly unwind the strips from their balls and pin them to the heading as at first; and so go on till the warp is all filled. Then cut the carpet from its frame, stitch the last row of filling to the warp-strips (in the same way as you made the selvage), also the first row at the opposite bar—having unrolled your work—and the carpet is made, all ready to be tacked to the floor. If care is taken to mend the strips whenever they break, and to replace with new those that get worn out, a carpet of this kind may be kept handsome and strong a great many years.

Very pretty floor mats may be made of just such strips as form this carpet. For a frame to weave them in, take a large barrel or hogshead hoop and wind around it cotton cloth. Sew to this twenty-five or thirty strips—to compose a narrow web;—they must be just long enough to pass tightly across the centre of the hoop. Then, in an opposite direction, fastening each strip to the hoop as you proceed, weave in the same number of strips of the same colors, so that you make a woven square in the middle. Then fill the triangular spaces, left empty, by strips sewed by one end to the cloth wound around the hoop, and by the other to the outer strip of each web forming the square, and with a long strip weave around the square till the frame is full, and you have a round mat. Rip it from the frame and sew around the edge two or three rows of points cut from the pieces of cloth that were too small to make strips; these form a pretty border if their colors are tastefully arranged.

Braided carpets are very durable, and by a nice arrangement, combining both mottled and plain stripes, are very handsome. A flat braid of four or six strands is best for a large carpet, and list stripped in quarter-inch widths is nice to make them of; but flannel or other woolen goods, wide enough to be folded two or three times, is needed to give it brightness, for it needs strong contrasts of color. Make your braids of the requisite length, then sew them together with strong thread, well waxed,—good shoe thread is just the thing,—with beeswax. Some persons sew braids in over-stitch. But it is much better to pass the needle and thread through a strand of the two braids to be united, just under the surface, in close darning, as it were, back and forth; then the thread does not come in contact with the floor, and so is not worn out; and your carpet looks equally well on both sides.

Braided mats are very serviceable. If you have any bits of "boughten" carpeting, they will make pretty centres for these. Line them, or use them double, because the braids surrounding them will be so heavy that single carpeting would soon break away from them. All sorts of rags can be used for braided mats; soft and thin woolen are the best. Fold the material so as to hide all raw edges, and make each strand of the same width and ful-

ness. A round strand, almost a roll, is better than a flat one for mats; and a braid of three or four the prettiest. Two or three colors together make a handsome mottled braid, which when alternated with plain braids have a lively appearance. An oval is the most convenient shape, and the easiest to form. If you have no carpeting for the centre, for a mat that shall be a yard at its greatest length, and three-quarters at its greatest width, make a braid six or eight inches long and finish both ends neatly. Then make a braid more than twice as long as this, sew the strands neatly together at the beginning, and pin the last end.

Braids, whether for a mat or carpet should be laid upon a table to be sewed—they will be more likely to attain a flat and even shape there; and, in fact, they are too heavy to manage in the lap. So you will lay the short braid upon a table and sew the other around it, with just such thread and wax, and the same sort of stitch, as for a braided carpet. If this braid is more than sufficient to go around, cut off the surplus. Meet both ends and join them on the back of the braid so neatly that the seam will not be observed. Sew around and join every row in the same manner. If you please, you can make a quantity of braid before beginning to sew, but each row that is added to the mat must be united by its ends so that the mat is a succession of unbroken rings. (Some persons make these mats of one long braid, so that when different colors are introduced the mat looks crooked and broken, and the closing off seems unfinished.) Two or three rows of points cut from thick woolen pieces make a pretty border; but the mats are handsome enough without, if their two or three outer rings are of dark braid.

There is no piece of work that so betrays a person's habits as one of these mats. She who is accustomed to do things carefully will make them of smooth, even, tight braids that will last in constant use a dozen years; while a careless and untidy person will be satisfied with irregular, rough and loose work that scarcely pays for the time spent upon it. To make these mats lie perfectly flat, place them beneath heavy chests, or under the feather-bed or mattress in beds that are occupied, and let them remain there a week or ten days before using them.

Crocheted mats, made either of very coarse yarn or of narrow strips of woolen cloth, are quite pretty and durable. If of cloth, fold and press it, and make each stripe around complete in itself. Rugs and mats imitating chenelille are made of very small pieces and parings of all sorts of cloth —that which is cut crosswise is best. The edges are picked, or ravelled, and the pieces are then gathered on a strong thread—and drawn so closely together that nothing but the fringed edges are seen,—into long bunches, which are sewed in overstitch to a thick cloth. Similar to these are mats made of squares, or rounds an inch in diameter, that are folded in quarters and each piece sewed by its centre to a thick cloth. Sail-cloth is good for these, and also for the chenelille mats. The design should be simple: a star of various shades upon a plain ground bordered with scrolls; or the centre of one color only, surrounded by blockwork, or the Greek border near the edge, gives a handsome mat.

Carpets and rugs of looped work are often very beautiful, and are the strongest of rag carpets. The foundation of these is tow-cloth, between the threads of which narrow strips of all kinds of cloth are drawn. Sometimes by being attached to a needle and thread; but, much easier, by being hooked through by an iron instrument made like a very large crotchet needle. If these are not found at the hardware stores, any blacksmith can easily make one. The tow cloth should be quite stiff. A carpet must be made in breadths, which, when finished, sew together like those of a tapestry carpet. Extend these breadths in a frame—a quilting frame answers very well—and as the work proceeds roll it up, as in making a strip carpet. Almost any lady can draw designs by having the articles before her to copy.

After the cloth is extended, having decided upon the pattern—groups of flowers, with a great deal of foliage are the easiest to make, and are also the most effective—take measures for ascertaining the centre of the width; and here you will commence the centre of the design. It is less monotonous to alternate large and smaller designs, and so attention must be paid to the relative space each requires. A carpenter's pencil, a piece of red chalk, or a bit of charcoal is needed to draw with. It is necessary to trace first a circle, or an oval, that will include the space occupied by the design—to be obliterated when the drawing is finished. For this lay upon the cloth a cover—a tin pan, or something of the kind—and mark lightly around it. Then take two ar three roses with their buds, and the same of lilies, with a few of the rose leaves and other larger leaves—such as grape or maple leaves. Arrange them tastefully in a broad dish, containing water to keep them fresh, upon a table just beside you; and then lay, one by one, drawing its outlines as it lies, just such flowers, buds, and leaves, upon the cloth, within the circle just traced. After the outlines are marked it is easy to draw the edges of the petals, and the veins of the leaves, by looking at the flowers in the dish. The group should not be crowded, but the leaves may hide part of some of the flowers in a natural manner, and the buds, which contribute largely to the beauty of the pattern, be allowed due prominence.

Generally, the flowers wrought in carpets are too large to be handsome—the natural size is by far the prettiest. If you want gaudy figures copy peonies and tulips; but roses, lilies, asters, daisies, dahlias, always look well, and show good taste. It is imprudent to attempt to copy any smaller flowers than these, as in drawing in the plain color

for the ground of the carpet you would have great trouble in keeping their forms distinct and regular. For rugs, a wreath prettily arranged is a good design; or the centre may be a group of flowers, while near the edges a border of grape leaves, or of the convolvulus (morning glory) vine in bloom, is portrayed with good effect.

The rags composing these carpets and rugs vary in width according to their thickness; the strips must be substantial enough to fill the interstices of the cloth through which they are hooked with loops so tight that they cannot be easily taken out. Hold the strip with your left hand under the cloth, and push the hook held in your right hand between the threads of the cloth, and thus draw up the strip into a loop half an inch long. Make the loops as close as they will hold in the cloth. The work is very handsome with the loops uncut; but if they are sheared it is as beautiful as velvet. Soft woolen and old silk make the nicest pile. Carpet thrums, obtained at carpet mills, are next best. Old doeskin and broadcloth look very well, and, though they are extremely hard to loop, they are so durable that they are always desired. Cotton rags may be introduced, in small quantities; in fact, any sort of rag that can be used in no other way is available in loop-work.

Do not forget that to make a good carpet or rug of this kind the loops must stand firm in their places by their own thickness, and must be as close together as possible. I have seen loop-work that was covered on the under side with stiff flour paste to keep the rags in the cloth, and even with this they were constantly dropping out. But when well made there is not the slightest need of paste, and the work will last a lifetime, standing unharmed through many a violent shaking. It is hoped that the importance of the subject is sufficient excuse for the great length of this chapter.

For the New England Farmer.

LEMON PIES.

For the benefit of "A Reader and Subscriber," I send the following receipt for making lemon pies:

For two pies pare three lemons; press out the juice; remove the seeds; chop the lemons fine; to the lemons and juice add three or four eggs; three cups of sugar, (I use maple, but crushed is better;) beat the mixture well; crust the same as for apple pies, except it needs more shortening; the batter will appear thin, but confine it well with the top crust and it will come out of the oven all right. In paring your lemons be careful to remove all of the white, or your pies will be bitter.

North Danville, Vt. MRS. WM. J. STANTON.

For the New England Farmer.

WASHING FLANNELS.

MR. EDITOR:—In the FARMER for May 8, you give a good rule for washing flannels, but I think mine is better. It is as follows:—

Dissolve in a tub of hot water (as hot as the hands will bear) sufficient *soft* soap to make a strong suds,—the rosin in *hard* soap makes flannel stiff. In this rub the flannel, with the hands, gently. When it is clean take it into a tub of clear warm water that has been blued, and rub it well, not roughly. Then wring it out as dry as possible in a towel if you please. Open a table, and lay the flannel on this, making it straight by the side and end of the table. Then smooth it across and downward with the hand till it is square and straight and all wrinkles are gone. Then dry it as quickly as possible,—on a horse by the fire, if you can. Meanwhile let your irons be heating, and before it is wholly dry press it with moderately warm irons.

Flannels should never be taken from warm water to cold, nor dried in a draught of cold air, nor allowed to freeze. Such management shrinks and yellows them. NENA.

AMONG the superstitions of the Seneca Indians is one of singular beauty. When a maiden dies they imprison a young bird until it first begins to try its power of song, and then, loading it with caresses, they loose it over her grave, in the belief that it will not fold its wings nor close its eyes until it has flown to the spirit land, and delivered its precious burden of affection to the loved and lost.